INTEGRATING INTUITION AND RATIONALITY:

DEVELOPMENT OF A POST-ENGAGEMENT REFLECTION

TO ENHANCE CAREER DECISION-MAKING

BY

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ABSTRACT

The Post-Engagement Reflection (PER; a mindfulness-based intervention) was developed for use after an occupational engagement activity with the purpose of enhancing awareness of intuitive data and facilitating the integration of System 1 (intuition) and System 2 (rationality) in career decision-making. Sixteen graduate students who were enrolled in a graduate course on career development participated in an experimental study that explored the effectiveness of the PER when employed after an informational interview. Students were divided into treatment and control groups and were matched based on their tendency to rely on experiential information when making decisions as measured by the Rational Experiential Inventory. After conducting informational interviews with individuals in the community, participants in the treatment group completed the PER while members of the control group completed a brief analog-type item where they rated how positively or negatively the informational interview went. Follow-up interviews were conducted by the researcher with all 16 participants to explore the impact of the intervention. Analysis of follow-up interviews revealed that individuals who completed the PER in conjunction with the interview mentioned more intuition-related information in response to open-ended questions than did controls. The results also revealed that individuals in the treatment group mentioned feeling excited about their future careers and talked about physical sensations and specific emotions considerably more often than did individuals in the control group. Finally, participants' responses suggested additional ways that the PER may be beneficial which merit future study, including improved memory of the informational interview, enhanced motivation to remain occupationally engaged, and the perception that the PER served as a physical reminder of long-term career goals as well as a tool for alleviating self-doubt.

Key words: mindfulness, intuition, career decision-making, informational interviews

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CHAPTER 1

Integrating Intuition and Rationality: A Review

Historically, vocational psychology has been dominated by a conception of decision-making that emphasizes rationality. Beginning with Parson's (1909) conception of "true reasoning" in which a person should make job-related decisions based on rationally analyzing the relationship between factual information about what is required to succeed in a particular career and information about one's personal characteristics and preferences, this perspective has endured over time and has formed the foundation for decades' worth of theory, research, and interventions.

This tradition of emphasizing rationality in decision making remained the dominant paradigm in vocational psychology throughout the 20th century, and even to this day represents a dominant force that influences the nature of the majority of career interventions. For instance, Krieshok, Black, and Mckay (2009) noted that the single-most frequently utilized career assessment, the Self-Directed Search (Holland, Powell, & Fritzsche, 1994), which relies on Holland's typological theory of matching personality types with work environments, assumes that a person can rationally analyze their available options as well as their personal abilities and preferences.

Career Decision-Making as a Strictly Rational Endeavour

Numerous theories and career-related interventions in the field of vocational psychology assume that human decision makers are rational individuals who make decisions by objectively and systematically analyzing themselves (e.g., their individual traits, abilities, strengths, or values) and their career options.

For example, Gelatt (1962) connected decision theory, from economics and mathematics, to educational and vocational decision-making by proposing a "decision-making framework" that counselors should implement to guide people in effective decision making. His framework consists of an extremely methodical rational approach to making a decision which requires that a decision maker clearly define his or her objective, gather relevant data, study possible alternatives, and evaluate the consequences of each potential choice. He further prescribed that in order to make a "good" decision, a person must utilize a "predictive system" that allows for the evaluation of likely outcomes; a "value system" to assign a level of desirability to each possible outcome; and a "decision criterion" to help integrate all relevant information and determine a course of action.

Similarly, Pitz and Harren (1980) proposed a model of career decision making they refer to as the "expected utility model" in which individuals are coached to consciously examine their personal preferences and values in light of two or more available options and their resulting outcomes. Krumboltz and Hamel (1977) also developed a framework for making career decisions from a similarly rational premise when they laid out a series of seven steps for rational decision making. Their seven steps included: defining the problem, establishing a plan of action, clarifying values, identifying alternatives, discovering probable outcomes, eliminating alternatives systematically, and starting action.

All of these approaches share the common assumption that a person can and should make a career decision by consciously analyzing all relevant aspects of the problem in a systematic fashion. These approaches might be summarized as a simple equation: objective, factual knowledge about one's self plus objective factual knowledge about the world of work plus unbiased reasoning equals optimal decision making.

What Else Is There?

In an article on adaptive decision making, Phillips (1997) characterizes what had previously been considered the epitome of the "adaptive decider" in vocational psychology as someone who is objective, uninfluenced by emotion, and who can systematically make decisions (in other words, someone who employs a strictly rational approach to decision making). Phillips observes, however, that those who have examined the decision making process in a way that "describes" rather than "prescribes" the nature of decision making have acknowledged, nearly unanimously, that a purely rational approach to making decisions simply "does not reflect the decider's reality" (p. 278, Phillips, 1997)

Scientists from a variety of disciplines, ranging from social and cognitive psychology (Lieberman, 2003) to philosophy and economics (Kahneman, 2003; Simon, 1955) have been exploring the role that intuition and unconscious thought play in human decision making. Beginning with Simon's (1955) article on what he termed "bounded rationality," a number of scientists and researchers have come to view human thought and decision making as processes that involve two interrelated systems. These theories which consider human thought to be divisible into rational and intuitive or conscious and unconscious components are referred to collectively as dual-processing theories.

While scientists differ in their terminology – Kahneman refers to intuition as "System 1" and to reason as "System 2" while Lieberman (2003) has labeled intuition and reason the "x-system" and the "c-system," respectively – all agree that human judgment does not rely on reason alone. Furthermore, dual-processing theorists seem to agree on a fundamental divide in human thought that can be broken down as follows: 1) an intuitive component that involves automatic, global processing, frequently makes emotion-based judgments, and can process large amounts of

data extremely quickly, and 2) a rational component that can handle far less information but which can dissect information into parts and analyze it systematically, is capable of rule-based thinking, and is more flexible.

Dual-processing theorists have taken differing stances about whether rationality or intuition is superior. Kahneman, for instance, has extensively examined the many heuristics and biases to which decision makers are susceptible and the way that intuition can lead people astray and cause errors in judgment. On the other hand, compelling arguments have been made for the potential advantages of harnessing System 1.

A Case for Intuition

There is considerable evidence to indicate that intuitive or unconscious thought can provide particular advantages, enabling people to make better decisions under certain circumstances than they might if they relied on a strictly rational approach. Dijksterhuis (2004), for instance, conducted a series of three experiments which provide persuasive evidence that unconscious thought is actually superior to conscious thought when one is making a complex decision, which the author defines as a decision that involves the consideration of multiple factors simultaneously. The author hypothesized that given the limited capacity of conscious thought (40-60 bits per second) and the comparatively massive capacity of unconscious thought (estimated around 11,200,000 bits per second), decisions that involve processing relatively large amounts of information would be best made via unconscious thought, and his results bore out this hypothesis in all three experiments.

In the first and second studies, Dijksterhuis (2004) examined the decision-making process in evaluating the desirability of apartments and in selecting the most desirable apartment, respectively. For both studies, participants were presented with 12 pieces of information about 4

distinct apartments. After participants viewed all of the relevant information to make a decision, the author manipulated conscious versus unconscious thought by either instructing participants to "think about" which choice would be better or by having participants distract their conscious mind by performing the n-back task. The results of these studies revealed that the participants who distracted their conscious mind with the n-back task, and who presumably allowed their unconscious to process the information, were considerably better than participants who consciously analyzed the alternatives both at evaluating the apartments individually and at making an optimal choice as to which apartment was superior. In fact, participants who engaged in deliberate, conscious decision making about the apartments had no clear preference for the apartment that had been deemed objectively superior whereas those in the unconscious thought condition were much more likely to choose it.

In the third study, these results were replicated using the same method; unconscious thought was once again shown to be superior in complex decision-making, this time when evaluating three roommates with 12 attributes apiece. Once again, participants in the unconscious thought condition formed evaluations that aligned most closely to the overall attractiveness of the roommates as determined by pilot tests that examined what attributes are most important to the majority of people in selecting a roommate. (Dijksterhuis, 2004)

Wilson and Schooler (1991) found further support for the claim that decision making may be enhanced in some instances by intuitive or automatic processing rather than through reasoned analysis in a jam-tasting experiment they conducted on 49 undergraduate students. The experimenters placed students in two separate groups: a group in which students were prompted to evaluate 5 different jams based on their automatic preferences and another group in which

students were told to "think about their reasons" for preferring certain jams over others and to write those reasons down.

The students' jam preferences in each of the two conditions were then compared with the opinion of expert taste tasters. The results of this study revealed that students who simply rank ordered their preferences evaluated the jams in a way that correlated quite closely with expert jam tasters ($r = .55$) whereas students who were asked to write out the reasons for why they preferred particular jams ended up evaluating the jams in a way that correlated significantly less with the opinion of expert jam tasters ($r = .11$).

The authors argued that this presents evidence to support the idea that introspecting about (or applying conscious thought to) our preferences interferes with our automatic ability to make sound judgments based on liking and disliking and may actually alter our final preferences or evaluations in an undesirable direction (in this instance, so that it deviates further from expert opinion).

Not only might decisions made through reasoned analysis or deliberative conscious thought be objectively inferior, but these decisions might result in regret. Wilson and Schooler (1991) suggest that the alteration in preferences that results from reasoned analysis is only temporary so that ultimately peoples' preferences revert back to their original, automatic preferences, resulting in regret over the decisions they made when deliberately analyzing or consciously weighing the relative merits of each choice. Conversely, we might conclude that, when dealing with matters of preference (i.e., liking or disliking), the automatic, intuitive process of decision making may result in a decision that produces more long-term satisfaction than would a more deliberative decision-making effort.

In a study that supported Wilson and Schooler's claim, Wilson and colleagues asked participants in one of two conditions to choose between five posters. When participants were later asked the extent to which they were satisfied with their selection, the participants who were instructed to analyze the pros and cons of each poster before selecting one reported less satisfaction than the participants who merely selected a poster based on initial liking. (Wilson, Lisle, Schooler, Hodges, Klaaren, & LaFleur, 1993)

Finally, in a study that is particularly pertinent to career decisions (Wilson & Schooler, 1991), 243 undergraduate students were given nine 200-level psychology courses from which to choose. Participants were randomly assigned to three different groups, two of which required participants to do what the study's authors classified as "thinking too much" (i.e., consciously analyzing and weighing the benefits and disadvantages of each aspect of each course) and one of which enabled participants to make a decision through unconscious means.

In the "thinking too much" conditions, participants were instructed to either 1) carefully evaluate each piece of information provided about each course and rate it based on how much and in what direction that piece of information would impact their decision to take that course or 2) analyze and write out their reasons for either liking or disliking each course. By contrast, participants in the "unconscious thought" condition were given a filler questionnaire to complete to distract their conscious mind.

When students from all three conditions were asked to make a course selection based on the information they were given, the students who made the decision without conscious deliberation made better decisions about which course to take than did participants from either of the overthinking groups (a "good" decision was operationalized as choosing a course that had received positive student evaluations in the past). In other words, students who relied heavily on

analytical conscious thought to evaluate their options or who were made to articulate their reasons for their preferences were more likely to make a decision that, judging by past student evaluations, was likely to be less satisfying.

Interestingly, the students in the overthinking conditions also remembered more "unimportant" information than students in the other conditions (such as room number and meeting time) and the least amount of "important" information (such as content covered and whether or not the professors were considered responsive to students), leading the authors to speculate that the type of introspection involved in rationally analyzing every facet of every option might confuse people's rational decision making by leading them to recall and weigh unimportant information more heavily than they should in order to make an optimal decision.

Collectively, the findings from these studies suggest an approach to career decision making entirely distinct from the rational models of decision making that have dominated the field of vocational psychology. Career exploration and decision making clearly constitute "complex" decisions as there are innumerable factors to consider. Students contemplating their future careers must take into account information about personal interests and ability, economic stability, wages, work environment, level of training required, and a host of other factors. These studies seem to suggest that in making this type of complex decision, decision makers would be best served by collecting the pertinent information and then thinking about something else so that their intuition can globally assess the problem without their conscious thought interfering by leading them to weigh unimportant information too heavily or over rely on attributes that are easier to articulate. Furthermore, although career-related decisions are not as straightforward as selecting a preferred apartment or poster, given the importance of preference and emotion in

enjoying one's work, we might expect individuals who deliberate less and who are not forced to articulate reasons for their choices to be more satisfied with their decisions.

Asking students, then, to choose a major or explore a career by dissecting the attributes of each option or by rationally contemplating their individual preferences and abilities might be a very poor strategy for this particular type of problem because such a decision is too complex to be handled in this way. Indeed, this strategy would likely prompt the type of introspection and analytical reasoning that can to lead to relatively poorer decisions or dissatisfaction with a particular decision. When choosing between several educational or career options, a person might do better to let their intuition globally assess the options rather than use reason to analytically weigh the pros and cons of each option.

A Career Decision-Making Model that Accounts for Intuition: The Trilateral Model

Krieshok, Black, & McKay (2009), in their article on "the limits of rationality", also advocate for the importance of the unconscious or intuitive element of decision making, proposing a career decision making model called the "Trilateral Model" in which the rational and the intuitive are "dialectically intertwined." Their model conforms to a view which privileges neither rationality nor intuition, but draws from Klein's (1998) proposition that individuals generally rely on both reason and intuition when making a decision. They therefore argue that integrating both reason and intuition is necessary in order to employ "adaptive rationality," which they define as a state in which decision making is optimized by acquiring a combination of both experiential and factual information. Experiential data with its vivid, emotional elements can contribute to a decision maker's intuitive fund of information while factual information can be used to check this intuitive information. In addition to employing intuition and reason, then, occupational engagement is the third component of the trilateral model.

Occupational engagement involves ongoing, active exploration of career information and learning about one's self in relation to the world. Krieshok et al. (2009) note that occupational engagement is the "ongoing assignment we can never go wrong prescribing" (p. 284) because it helps people to acquire both factual and experiential data. Engagement involves such activities as volunteering, conversing with others about potential career options, pursuing new opportunities, staying involved in groups or organizations, and attending lectures or other activities that might better prepare a person for a potential future career. By remaining occupationally engaged, a person's implicit and explicit understanding of the occupational world and of themselves can continually evolve so that their future career-related decisions will be based on information that is as accurate and up-to-date as possible. (Krieshok et al., 2009)

Krieshok acknowledges that achieving the optimal integration of rational and intuitive is the current "sticking point" (T. Krieshok, personal communication, August 30, 2015). While many interventions focus on enhancing a person’s ability to utilize a series of rational steps in career decision-making, there is a relative lack of information about how to enhance a career decision-maker’s intuition. One way we might approach this problem is to examine situations in which a person deliberately attends to any and all experience, expanding their awareness to encompass not only the usual stream of thoughts, but also emotions and physical sensations. Mindfulness, which seeks to do precisely that, may be one way to begin thinking about helping people to incorporate intuitive data into their decision-making process.

Mindfulness in Decision-Making

Kabat-Zinn, one of the first people to discuss mindfulness in the psychology literature, provided an operational definition of mindfulness as "awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience

moment by moment" (Kabat-Zinn, 2003, p. 145). Mindfulness is therefore considered to consist of three components: awareness, a non-judgmental stance, and attention to the present moment (Kabat-Zinn, 2003).

Mindfulness is associated with an array of positive outcomes and has consequently received increasing attention in psychology in recent years. Cultivating a mindful state has been shown to help with enhancing executive function, regulating negative emotions, combatting psychological illnesses such as depression and anxiety, improving interpersonal functioning, and enhancing overall well-being and life satisfaction (Brown, Ryan, & Creswell, 2007). Additionally, mindfulness constitutes a central element in a number of Evidence Based Treatments, such as Acceptance and Commitment Therapy, Dialectical Behavior Therapy, and Mindfulness-Based Cognitive Behavior Therapy (Brown, Ryan, & Creswell, 2007)

In addition to its generally advantageous effects with respect to mood and well-being, research is beginning to suggest that mindfulness may play an important role in successful decision-making. For instance, Dane (2004) inadvertently discovered that trial lawyers who were mindful during decision making were better able to integrate information from their previous experience with other relevant information to arrive at an optimal decision. Similarly, Huber (2010) found that eliciting a mindful state made people more fully aware of the attributes that informed their decisions and enabled them to be more intentional in their decision-making by helping them to reflect on the factors which they most wanted to inform their decisions (e.g., personal preferences, subjective experience, and facts rather than peripheral cues or social influence) and adjust their decision-making process accordingly.

Mindfulness in Career Decision-Making

Jacobs and Blustein (2008), the first to discuss the potential benefits of mindfulness in a career counseling context, suggested that mindfulness-based skills could help clients by enabling them to better cope with employment uncertainty in a constantly-changing work environment. They also suggested that mindfulness skills could help clients to make better work-related decisions due to increased calmness, lowered stress, and a "more centered mode of functioning" (p. 174).

Zhang (2011) was the first to examine the benefits of mindfulness in a career context and was able to provide initial empirical evidence of the benefits of mindfulness in promoting optimal problem solving and decision-making. The results from his study showed that more mindfulness was associated with less anxiety regarding uncertainty, less pessimistic thoughts related to career decision-making, and a better sense of one's occupational identity. The results also revealed that individuals who were more mindful (e.g., less preoccupied with past and future, less absent minded) were more likely to demonstrate higher levels of occupational engagement. While this particular study looked at dispositional mindfulness, there is also evidence to support that state mindfulness might also prove useful in a career decision-making context.

Huber (2010) found that eliciting a mindful state made people more fully aware of the attributes that informed their career decisions and enabled them to be more intentional in their decision making by helping them to reflect on the factors which they most wanted to inform their decisions (e.g., personal preferences, subjective experience, and facts rather than peripheral cues or social influence) and adjust their decision-making process accordingly.

Mindfulness has been discussed as a way to prompt self-exploration and enhance self-understanding (Kabat-Zinn, 1994; Brown et al., 2007) as well as a method for enhancing one's understanding of personal values through reflection given that certain values and their corresponding decisions are frequently shaped by outside factors, such as familial, cultural, and societal influence. Mindfulness may enable a person to choose to act on those values which they feel most closely align with their authentic self (Shapiro, Carlson, & Astin, 2006) as opposed to those values which family or society might dictate. Given the importance of understanding one's preferences and values for effective career decision-making (Lent, Brown, & Hackett, 2002), mindfulness could prove to be a crucial ingredient for enhancing effective career decision-making.

In addition to enhancing a career decision maker's self-awareness and intentionality, mindfulness may also help to solve the problem of achieving the optimal integration of rationality and intuition, a problem which Krieshok acknowledges is the current "sticking point" (T. Krieshok, personal communication, August 30, 2015).

In the Trilateral Model, occupational engagement – which involves the ongoing, active exploration of career information and learning about one's self in relation to the world – is considered the "ongoing assignment we can never go wrong prescribing" (Krieshok et al., 2009, p. 284) because it helps people to acquire both factual and experiential data. Experiential data with its vivid, emotional elements can contribute to a decision maker's intuitive fund of information while factual information can be used to check this intuitive information. According to this model, occupational engagement and the information it supplies (both intuitive and rational) are crucial elements to informing optimal career decisions. By remaining occupationally engaged, a person's understanding of the occupational world and of themselves can continually

evolve so that their future career-related decisions will be based on information that is as accurate and up-to-date as possible. (Krieshok et al., 2009)

Occupational engagement and the information it supplies (both intuitive and rational) are crucial elements to informing optimal career decisions. Frequently, however, people participate in activities in a state of "mindlessness". While "mindless," important aspects of our experiences go unnoticed because thoughts about the past or future overwhelm our awareness of the present moment. Indeed, in a study of more than 2,000 adults, people reported that they were lost in thoughts unrelated to their present experience nearly half of the time (Killingsworth & Gilbert, 2010). Given this reality, it is likely that the average decision maker would miss important details from an occupational engagement experience, thereby leading to qualitatively impoverished data. By employing a mindfulness-based intervention to enhance present-moment attention, however, career decision makers could develop richer stores of data on which to base future decisions.

These stores of data might be expanded through mindfulness to include both factual and intuitive data. Dane (2011) suggests that while intuitive processes themselves are unconscious, their outcomes (i.e., “intuitions” or “gut feelings”) can be attended to consciously. Since mindfulness involves directing one’s attention to emotions, thoughts, and bodily sensations experienced in the present moment (Kabat-Zinn, 2004), it is more likely that a person might consciously notice their intuitions or gut feelings when in a state of mindfulness.

Findings in the area of neuroscience also suggest that mindfulness could enhance intuition by reducing reliance on verbal processing. In a study on mindfulness training, a group that underwent brief mindfulness training responded to emotional stimuli with decreased activity in regions of the brain associated with verbal processing compared to controls (i.e., Wernicke's

and Broca's areas). The treatment group also displayed diminished activity in parts of the brain associated with autobiographical memory and self-referential processing (Farb, Anderson, Mayberg, Bean, McKeon, & Segal, 2010); so, rather than labeling their emotions or associating them with knowledge of self or past experiences, mindful participants could remain in closer contact with the experience itself.

Within the context of dual-processing theory, these findings suggest that mindfulness might enable a person to disengage momentarily from System 2 processing in favor of more direct, experiential data – something which we might expect could facilitate the integration of rationality and intuition by providing an opportunity for System 1 to be heard. If career decision makers were to practice mindfulness after occupational engagement, we might expect them to be better able to disengage from their System 2 processing and rely less on logic-driven verbal processes, thereby enhancing their capacity for attending to the experience itself, including its emotional and intuitive components.

In conclusion, mindfulness may prove to be a crucially important ingredient in effective career decision-making by enabling people to better integrate information about values and preferences into career decisions; experience less anxiety regarding uncertainty; gather richer data from occupational engagement; and attend more closely to experiential information.

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CHAPTER 2

Mindfulness as a Possible Tool for Integrating Rationality and Intuition: Study

Current theory in the area of career decision-making understands that sound career decisions are not made by relying wholly on a logical analysis of alternatives, but by integrating one's intuition into the decision-making process. According to the "Trilateral Model of Adaptive Career Decision-Making," the rational and intuitive are "dialectically intertwined," and integrating both factual and experiential information is necessary for optimal decision making. (Krieshok, Black, & McKay, 2009). The Trilateral Model is predicated on the assumptions of dual-processing theory which asserts that decision-making relies on two distinct "systems" – System 1 (intuitive) and System 2 (rational). System 1 is understood to involve automatic, global processing, frequently makes emotion-based judgments, and can process large amounts of data extremely quickly, while System 2 can handle far less information but is capable of rule-based thinking, is more flexible, and can dissect information into parts and analyze it systematically.

In addition to emphasizing both intuition and reason in career decision-making, the Trilateral Model emphasizes occupational engagement, which is the active exploration of career information and learning about one's self in relation to the world. Occupational engagement is the "ongoing assignment we can never go wrong prescribing" (Krieshok et al., 2009, p. 284) because it helps people to acquire both factual and experiential data. Experiential data with its vivid, emotional elements can contribute to a decision maker's intuitive fund of information while factual information can be used to check this intuitive information. Occupational Engagement involves activities such as volunteering, conversing with others about potential career options, pursuing new opportunities, becoming involved in groups or organizations, and attending lectures or other activities that might prepare a person for a future career. By remaining

occupationally engaged, a person's understanding of the occupational world and of themselves can continually evolve so that their future career-related decisions will be based on information that is as accurate and up-to-date as possible. (Krieshok et al., 2009)

Krieshok acknowledges that achieving the optimal integration of rational and intuitive is the current "sticking point" (T. Krieshok, personal communication, August 30, 2015). While many interventions focus on enhancing a person's ability to utilize a series of rational steps in career decision-making, there is a relative lack of information about how to enhance a career decision-maker's ability to attend to their intuitive processes and integrate their intuitive impressions with rational thoughts.

Mindfulness could provide an ideal method for doing just that since mindfulness emphasizes deliberately attending to one's experiences and expanding one's awareness to encompass the usual stream of thoughts as well as emotions and physical sensations. Kabat-Zinn, one of the first people to discuss mindfulness in the psychology literature, provided an operational definition of mindfulness as "awareness that emerges through paying attention on purpose, in the present moment, and nonjudgmentally to the unfolding of experience moment by moment" (Kabat-Zinn, 2003, p. 145).

Martin (1997) argued that mindfulness "facilitates a scientific attitude of openness" – an openness which he characterized as "I don't know but I'm watching, reevaluating, discovering" (Martin, p. 308). Such an attitude should be optimally suited for making career decisions given the conception of career decision-making as involving a continual process of learning and integrating both factual and experiential information.

Zhang (2011) was the first to examine the benefits of mindfulness in a career context and was able to provide initial empirical evidence of the benefits of mindfulness in promoting

optimal problem solving and decision-making. The results from his study showed that more mindfulness was associated with less anxiety regarding uncertainty, fewer pessimistic thoughts related to career decision-making, and a better sense of one's occupational identity. The results also revealed that individuals who were more mindful (e.g., less preoccupied with past and future, less absent minded) were more likely to demonstrate higher levels of occupational engagement. While this particular study looked at dispositional mindfulness, there is also evidence to support that state mindfulness might prove useful in a career decision-making context. Huber (2010) found that eliciting a mindful state made people more fully aware of the attributes that informed their career decisions and enabled them to be more intentional in their decision making by helping them to reflect on the factors they most wanted to inform their decisions (e.g., personal preferences, subjective experience, and facts rather than peripheral cues or social influence) and adjust their decision-making process accordingly.

Occupational engagement and the information it supplies (both intuitive and rational) are crucial elements to informing optimal career decisions. Frequently, however, people participate in activities in a state of "mindlessness". While "mindless," important aspects of our experiences go unnoticed because thoughts about the past or future overwhelm our awareness of the present moment. Indeed, in a study of more than 2,000 adults, people reported that they were lost in thoughts unrelated to their present experience nearly half of the time (Killingsworth & Gilbert, 2010). Given this reality, it is likely that the average decision maker would miss important details from an occupational engagement experience, thereby leading to qualitatively impoverished data. By employing a mindfulness intervention to enhance present-moment attention, however, career decision makers could develop richer stores of data on which to base future decisions.

These stores of data might be expanded through mindfulness to include not only factual data, but intuitive data as well. Dane (2011) suggests that while intuitive processes themselves are unconscious, their outcomes (i.e., "intuitions" or "gut feelings") can be attended to consciously. Since mindfulness involves directing one's attention to emotions, thoughts, and bodily sensations experienced in the present moment (Kabat-Zinn, 2004), it is more likely that a person might consciously notice their intuitions or gut feelings when in a state of mindfulness.

Findings in the area of neuroscience also suggest that mindfulness could indirectly enhance intuition by reducing reliance on verbal processing. In a study on mindfulness training, a group that underwent brief mindfulness training responded to emotional stimuli with decreased activity in regions of the brain associated with verbal processing compared to controls (i.e., Wernicke's and Broca's areas). The treatment group also displayed diminished activity in parts of the brain associated with autobiographical memory and self-referential processing (Farb, Anderson, Mayberg, Bean, McKeon, & Segal, 2010); so, rather than labeling their emotions or associating them with knowledge of self or past experiences, mindful participants could remain in closer contact with the experience itself. Within the context of dual-processing theory, these findings suggest that mindfulness might enable a person to disengage momentarily from System 2 processing in favor of more direct, experiential data – something which we might expect could facilitate the integration of rationality and intuition by providing an opportunity for System 1 to be heard.

If career decision makers were to practice mindfulness after occupational engagement, we might expect them to be better able to disengage from their System 2 processing, experiencing a lessened reliance on logic-driven verbal processes and a greater capacity for attending to the experience itself, including its emotional and intuitive components. The present

study was therefore designed to explore the effectiveness of a novel mindfulness-based intervention in the context of occupational engagement and will specifically examine how this intervention influences attention to System 1 and System 2 processing.

Development of the Post-Engagement Reflection

The Post-Engagement Reflection was created by the researcher in an effort to develop a tool that could be used to enhance mindfulness in situations in which people are occupationally engaged. The foundation for the Post-Engagement Reflection rests on the observation that intuitions can be consciously attended to by using mindfulness to observe the emotions and bodily sensations that one's intuition gives rise to (Dane, 2011; Kabat-Zinn, 2003). The Post-Engagement Reflection was therefore developed to facilitate the process of becoming more mindful of physical and emotional sensations immediately after being occupationally engaged. The PER consists of three pages, including brief instructions and two worksheets. The worksheets that comprise the post-engagement reflection were deliberately crafted in a way that would limit the use of words, thereby minimizing the reliance on verbal processes associated with System 2.

The final page of the reflection consists of an analog-type item where a person can provide a holistic or global rating of how positively or negatively he or she feels about the experience of the informational interview, a task which dual-processing theorists would agree is in line with intuitive processing (Kahneman, 2003; Lieberman, 2003). For this final part of the reflection, participants are instructed to go with their initial reaction or "gut feeling" rather than to reason through a response.

The Present Study

This study extends previous research by using a mixed-methods approach to explore the effectiveness of an intervention for enhancing intuition that employs mindful reflection. The intervention consists of a Post-Engagement Reflection intended to enhance participants' awareness of their intuitive (or System 1) processes immediately after an informational interview. Participants are graduate students who are enrolled in a career development class that requires completion of a series of informational interviews. The following research questions will be addressed:

1. How does completion of a Post-Engagement Reflection alter participant's attention to and memory of intuitive versus rational data gathered during informational interviews?

   H: Compared to controls, individuals who engage in the Post-Engagement Reflection are hypothesized to report more intuitive data from the informational interview and the time immediately after the informational interview during a follow-up interview.

2. Are there noticeable differences between the experimental and control groups in participants' descriptions of the informational interview and the span of time immediately after the interview?

   H: As this question is exploratory in nature, no specific findings are hypothesized. A descriptive approach will be employed to explore how participants describe their experiences and to examine similarities and differences between the groups.

Method

Participants

Participants included 16 graduate students who were enrolled in a career development course in the School of Education at the University of Kansas. Graduate students in the School of Education were selected to participate in this study because their unique characteristics, including conscientiousness, a focus on intrapersonal processes, high intelligence, and strong verbal abilities, made them optimally suited for completing all of the steps in the protocol and being able to reflect on and articulate their experiences. This strategy proved effective as all 16 participants completed all of the steps involved in the present study and their comments from the follow-up interviews provided qualitatively rich data.

Participants' ages ranged from 22 to 62, with a median age of 24. The majority of participants were White and female. Twelve of the participants self-identified as female while the remaining four self-identified as male. With respect to ethnicity, 12 of the participants identified as White, one participant identified as Filipino-American, one as Chinese, one as Black, and one as White/Hispanic. Thirteen of the 16 participants were enrolled in a master's or doctoral counseling psychology program while the remaining three were enrolled in a higher education program. The majority of participants were in their first year of graduate studies, with 12 of the participants reporting they were in their first year, two participants reporting they were in their second or third year, and one participant reporting that he was a non-degree-seeking student.

Materials

Demographics Questionnaire. All participants completed a demographics form (see Appendix A) which included information about age, gender, ethnicity, vocational and academic history, and projected career path.

Occupational Engagement Scale for Students (OES-S). The OES-S is a 9-item self-report measure which assesses the degree to which a student participates in behaviors that will provide data about the self, the world, and the self in relation to the world. (OES-S; Cox, Krieshok, Bjornsen, & Zumbo, 2015) (see Appendix B). Participants respond to each of the 9 items with a response that ranges from 1 (*unlike me*) to 5 (*like me*). The OES-S consists of a single factor and has high internal consistency (coefficient α of .80). Criterion validity has also been established for this scale, with the OES-S scores accounting for a significant portion of major satisfaction as well as estimates of gains in personal development in a sample of 311 undergraduate students (Cox et al., 2015).

Rational Experiential Inventory (REI). Participants were administered the Rational Experiential Inventory (REI; Pacini & Epstein, 1999) (see Appendix D) both before and after their informational interviews. The REI is a 40-item self-report measure which assesses the extent to which one relies on reason and/or intuition when making decisions. The inventory consists of two scales which have been confirmed through factor analysis (citation of REI): the Rational Scale, which measures the degree to which a person expresses a preference for and a reliance on logic, and the Experiential Scale, which measures the degree to which a person expresses a preference for and a reliance on intuition. Additionally, each of the two scales consists of two subscales which measure both "engagement" (the degree to which one enjoys and relies on intuition or reason) and "ability" (a person's confidence in his or her ability to make

decisions using reason or intuition). The REI has high internal consistency reliability with an internal consistency reliability coefficient of .90 for the Rational Scale and .84 for the Experiential scale.

Career Futures Inventory (CFI). The CFI (see Appendix E) is a 25-item self-report measure developed to assess positive career planning attitudes. The measure has three discrete subscales as revealed by exploratory factor analysis in a sample of 690 undergraduates. The subscales include Career Adaptability (CA), Career Optimism (CO), and Perceived Knowledge (PK). The measure has high internal consistency, with reported Cronbach's alpha coefficients of .85, .87, and .73 for the CA, CO and PK subscales, respectively. Additionally, the construct validity of the measure has been established through an examination of its correlation with numerous other general and vocationally oriented measures, including the NEO Five-Factor Inventory, the Skills Confidence Inventory, and the Revised Life Orientation Test (Rottinghaus, Day, & Borgen, 2005).

Interview Protocol. The interview protocol (see Appendix C) was developed for this study, was structured, and lasted approximately 20 minutes, depending on the degree to which participants chose to elaborate. I, the researcher, served as the only interviewer. Across all interviews, participants were asked identical questions in the same order. The wording of the questions was repeated verbatim and care was taken to ensure uniformity so that comparisons could be made across groups with respect to content. The wording was also thoughtfully crafted to avoid using the words "thoughts" or "feelings" in the original posing of the questions (e.g., I posed the following questions to participants: "What did the interview bring up?", "What were your impressions of the job?"), thereby enabling participants to comment on a wide variety of topics and report the type of information most salient to them. Posing the questions in this way, I

hoped to avoid creating a situation where interviewees might feel compelled to confabulate or "fill in" thoughts or feelings they did not actually recall in much detail or which seemed minimally relevant to them.

However, because I was particularly interested in interviewees' thoughts and feelings, I crafted follow-up questions that did in fact ask specifically for "thoughts" and "feelings" while taking into account that responses given to these follow-up questions might be less robust than thoughts or feelings that were included as a response to the original question. Follow-up questions were also utilized in a structured and systematic way; follow-up questions had a predetermined wording and were utilized only in instances when the interviewee did not provide any information about thoughts or feelings in their initial response. By structuring the interview in this way, I hoped to allow for the possibility that interviewees' focus during and after the interview involved minimal attention to thoughts or feelings while still enabling me to draw comparisons across groups with respect to the ratio of analytical versus intuitive thoughts and feelings. Furthermore, I anticipated that the frequency with which I employed each of these probes might in itself provide some useful information about participants.

In conducting the interview, I employed minimal encouragers and occasionally provided summary statements or restatements to clarify participants' meaning. In addition to occasionally prompting participants to elaborate on their previous statements, this served as a form of respondent validation as interviewees responded to restatements by either endorsing (e.g., "Yes, that's exactly right.") or amending them (e.g., "Kind of. Kind of yeah, I felt natural […] but I felt like I needed to try to have a good question and to smile…")

Post-Engagement Reflection. The Post-Engagement Reflection (PER) (see Appendix F) was developed for the purposes of this study and was designed to enhance awareness of and

attention to intuitive reactions after engaging in some form of career exploration. It consists of three parts: instructions to mindfully attend to physical and emotional reactions to the career-related activity; an outline of a human body on which participants draw to represent their physical and emotional experiences during the mindfulness activity; and a single analog-type item intended to help participants summarize their overall intuitive impression.

Procedure

Design. The present study employed an experimental design. The independent variable was the group to which participants were assigned and consisted of two levels: the Post-Engagement Reflection and a control group whose members participated in all aspects of the study with the exception of the mindfulness activity and the accompanying drawing. Members of both groups filled out the surveys both pre- and post-intervention, conducted an informational interview, rated the informational interview using an analog item, and were interviewed by the researcher. The dependent variable was percentage of intuition-related comments made in the follow-up interview with the researcher.

Participant Recruitment. Participants were recruited from a graduate-level career counseling course (EPSY 846) offered at the University of Kansas. As part of the course, students in this class were required to complete three informational interviews over the course of the semester. In order to recruit participants for the study, the researcher solicited the instructor's approval to visit the EPSY 846 classroom during the first few weeks of class. The researcher spent 5 minutes explaining the purpose of the study as well as the steps involved to participate before requesting the EPSY 846 students' collaboration. Students who agreed to participate were directed to the webpage for the department of Educational Psychology's online research participation system, SONA, where participants registered online for participation in the study.

Students were given extra credit if they choose to participate. Eighty-eight percent, or 16 out of 18, of the students enrolled in EPSY 846 chose to participate in the study. Of the students who opted to participate in the study, 100 percent followed through to completion.

Assignment to Groups. After participants completed the pre-test measures, they were assigned to either the Post-Engagement Reflection condition or to an informational interview-only condition. Participants were matched by their experiential score on the Rational Experiential Inventory in order to ensure an equitable distribution between groups of participants who were naturally inclined to attend more closely to experiential or intuitive information. This was accomplished by writing down each participant's name and experiential score and then ranking the scores in order from lowest to highest. The highest scoring participant was then assigned to group 1, the second highest to group 2, the third highest to group 1, etc. until all participants were assigned to a group. Finally, which group would become the intervention group was determined with a coin toss.

After assignment to groups was complete, the mean score on the Experiential Scale was the same in both groups, with a value of 76.13. The maximum and minimum scores were also comparable across groups, with a maximum score of 88 and a minimum score of 63 for the treatment group and a maximum and a minimum of 87 and 66 for the control group. The scores on the Rational Scale differed only slightly between groups, with a mean of 79.38 for the treatment group and 75.38 for the control group. The maximum and minimum scores were also comparable across groups, with a maximum score of 85 and a minimum score of 68 for the treatment group and a maximum and minimum of 83 and 69 for the control group.

Pilot Interviews. Before interviews were conducted with participants, two graduate students in the counseling psychology program who were not taking the EPSY 846 course were

recruited to participate in a pilot interview. After being interviewed, the interviewees provided feedback about questions that were unclear or difficult to answer. I also explained to each interviewee the type of information I sought to elicit with each question and asked them to comment on whether or not they felt posing the question in a different way may have been more effective in eliciting the type of information I was seeking. The first pilot interview resulted in several substantial changes to the wording and content of the questions. By the second pilot interview, only one minor change was made to the questions, and it was jointly determined that the questions were effective in eliciting the type of information I sought.

Data Collection. After having registered online, all participants completed the pretest measures, which consisted of the demographics questionnaire, the OES-S, the CFI, and the REI. Participants were then assigned to either treatment or control group as described in the section "Assignment to Groups." Next, participants were contacted via e-mail for one-on-one 5-minute meetings with me during which I provided each participant with the necessary materials and with brief instructions about when and where to complete the activity. Participants in the treatment group received the Post-Engagement Reflection while participants in the control group received a single sheet of paper with the analog-type item asking them to rate how positively or negatively the interview went. Participants were instructed to complete the PER or fill out the analog-type item immediately after the interview – either in their car before leaving the interview site, on the bus on their way home, or seated outside of the place where they conducted the informational interview.

Finally, participants were instructed to notify me via e-mail as soon as they scheduled their second informational interview in order to schedule the follow-up interview precisely one week subsequent to the informational interview. The second informational interview was chosen

as the basis for this study to give participants the chance to become familiar with the process of conducting informational interviews before asking that they complete an additional task related to the interview. A period of precisely seven days was chosen so that the follow-up interview would fall on a weekday rather than a weekend. Given that participants' memory of specific details is one of central elements explored in the analysis, it was determined that interviews should be conducted the same number of days subsequent to interviews for all participants so that differences observed in memory would not be due to uncontrolled variance in the time that elapsed between interviews. For 14 of the 16 participants, interviews were successfully completed at the 7-day mark; however, one participant from the control group completed the follow-up interview the day after her informational interview due to her interviewee postponing the interview and one participant from the treatment group completed the follow-up interview 8 days after the informational interview because of an unforeseen trip.

Follow-up interviews were conducted on campus in an empty classroom and lasted approximately 20 minutes. All interviews were recorded with a digital audio recorder. At the conclusion of each interview, participants were thanked for their time and were asked to please turn in either the pages they filled out as part of the PER or the page with the analog-type item. Participants were also told they would soon be receiving an e-mail with a link to the follow-up survey.

After all participants had completed the follow-up interview, an e-mail was sent out to each participant with a link to the final set of surveys for the post-test measures. The post-test measures consisted of the same measures that were administered pretest (the OES-S, the CFI, and the REI) as well as two additional measures that asked participants to rate how vividly (on a

scale from 1 to 10) they recalled the informational interview and the time immediately following the informational interview.

Included is a table that provides a step-by-step breakdown of the process taken to inform participants about the study.

<table>
<tr><th colspan="2">All participants</th></tr>
<tr><td colspan="2">1. EPSY 846 class invited to participate in the study. Told the study included two online surveys and a follow-up interview with the researcher exactly seven days after completing their second informational interview for the course.
2. Everyone who agreed to participate received an e-mail with a survey link to complete the initial survey which included a demographic questionnaire, the REI, the CFI, and the OES.
3. Once the surveys were completed, participants were assigned to treatment or control group based on their scores on the Experiential Scale of the REI.
4. All participants were sent a form e-mail about setting up an individual meeting with me to “go over a couple of details” about their participation in the study.</td></tr>
<tr><th>Control group</th><th>Treatment group</th></tr>
<tr><td>5. Given a single paper with the analog-type item.
6. Given verbal instructions that mirrored the written instructions to “mark a vertical line on the paper indicating how positively or</td><td>5. Given a two-page packet that consisted of the PER.
6. Given verbal instructions that mirrored the written instructions on the first page of the packet to “set a timer,” “close your eyes and observe</td></tr>
</table>

<table>
<tr>
<td>negatively they felt about the interview experience.”
7. Instructed to “take this paper” with them to the informational interview and keep it in their glove compartment or in a bag along with a pen so they could complete the activity immediately after the interview.</td>
<td>the feelings that arise,” and “use the following page… to represent what you are feeling.”
7. Instructed to “take these pages” with them to the informational interview and keep it in their glove compartment or in a bag along with a pen so they could complete the activity immediately after the interview.</td>
</tr>
<tr>
<td colspan="2">All participants</td>
</tr>
<tr>
<td colspan="2">8. Participants were reminded about the follow-up interview in which they would be asked about their “experience of the informational interview”
9. For participants who had already scheduled their second interview, a follow-up interview was scheduled during the individual meeting. Those who had not yet scheduled the interview were told to contact me via e-mail to schedule the follow-up interview as soon as their second informational interview was scheduled.
10. Participants completed their second informational interviews along with either the PER or the analog-type item.
11. Follow-up interviews conducted with each individual participant. The same questions were asked in the same order for all 16 participants.
12. Participants told to “keep an eye out” for a final e-mail from me that would include a final online survey.</td>
</tr>
</table>

13. Participants completed final survey, which included the REI, the CFI, and the OES-S along with two Likert-scale items asking them to rate how vividly they recalled the interview and the time immediately after the interview on a scale from 1 to 10.

Data Preparation. I transcribed the audio recordings from the digital recorder over the course of several weeks. Each transcript was labeled with an ID number that was assigned to each participant, and identifying information was removed during the transcription process. A separate document was kept on a password-protected computer that included each participant's name and ID number.

The data gathered through the surveys were gathered in two parts. The data from the first survey were downloaded as soon as all 16 participants completed the first set of survey questions, and each participant's score on the REI was calculated in order to complete the matched assignment to treatment or control group described above. The data from the final survey was downloaded after the final participant had completed the second survey, and at this time scores were calculated for each participant on the CFI and OES-S from both the first and second survey as well as for the REI from the second survey.

The OES-S was scored by calculating the sum of the scores of each item for all 9 items. For the CFI and the REI, scores on several of the items first had to be reversed, and then scores were calculated for each subscale.

Data Analysis

Overview of the Data Analysis Process. To explore differences between participants in the post-engagement reflection condition and participants in the informational interview-only

condition, both quantitative and qualitative analyses were utilized. A different approach was taken for each of the initial research questions.

For the first question ("How does completion of a Post-Engagement Reflection alter participants' attention to and memory of intuitive versus rational data gathered during informational interviews?"), a quantitative approach was taken to analyzing the transcripts. This approach involved coding the same portion of each transcript in order to compare the frequency of intuitive and rational comments made by participants in each group. Additionally, qualitative analysis was conducted to further describe the nature of the comments made by participants in each group and to elaborate on some of the differences observed across groups.

For the second question ("Are there noticeable differences between the experimental and control groups in participants' descriptions of the informational interview and the span of time immediately after the interview?"), a qualitative approach was employed. The qualitative analysis involved a descriptive approach and focused on finding themes and sub-themes evident in the transcripts from both groups. Additionally, numerical comparisons were made with respect to the frequency that a particular theme was expressed by members of each of the two groups.

The following sections provide further elaboration on the data analysis process employed for each research question.

Analysis for Question 1. I opted to include a second analyst for this portion of the analysis who would not share my particular biases and who would be blind to which transcripts were associated with each group. Merriam (1998) suggests triangulating analysts, or having two people independently analyze the same data, as one way to address validity concerns. Given my participation in the development of the PER and my knowledge about which participants had

completed each task, I ran the risk of exaggerating slight differences or interpreting ambiguous comments in a way that favored my hypothesis if I were to analyze the data independently.

Accordingly, I solicited assistance from another person for this portion of the analysis. The person whose help I requested was a graduate student who was somewhat familiar with the concepts explored in the study but was blind with respect to whether the analyzed excerpts came from individuals in the treatment or control condition. Before initiating the process of coding, we jointly developed a coding system based on Kahneman's definitions of System 1 and System 2 as outlined in Maps of Bounded Rationality (Kahneman, 2003). In this article, Kahneman characterizes System 1 as "Fast, Parallel, Automatic, Effortless, Associative, and Emotional" while System 2 is defined as "Slow, Serial, Controlled, Effortful, Rule-governed, and Neutral".

After reading Kahneman's definitions, we discussed our understanding of the distinction between System 1 and System 2 in abstract terms before generating hypothetical examples to typifiy each category and guide our analysis. The prototypical statement we generated for System 1 was: "I'm not sure why, but I just felt really good about the informational interview!" For this statement, we discussed the fact that while System 2 may have been involved in wondering *why* the job "felt really good," this statement seems to rely much more heavily on the automatic and emotional System 1. Presumably, this hypothetical individual is reacting to a number of cues in the environment that she associates with environments, people, or tasks that she has enjoyed in the past. This fast, associative process leaves her grasping for a rational explanation, but she is aware of and recalls her "gut reaction" to the situation.

The prototypical statement we generated for System 2 was: "Several things he mentioned in the interview do not fit my criteria for my ideal job – the salary is too low and the position involves more administrative aspects than I would like for it to." For this statement, a rule-

governed analytical process is evident. The job is considered in terms of how well it fits certain criteria related to aspects of the job this individual deems important. While it is possible that System 1 is operating behind the scenes to cause this individual a "gut reaction" that she then rationalizes, in this instance the person is attending to and reporting the operation of System 2.

Once we had established examples for each of the two categories, we discussed a couple of other key details related to the analysis. First, we jointly determined that each transcript would be divided into units of meaning that were considered complete thoughts before each unit of meaning was coded. Next, we determined to code each statement as either 1) intuitive/feeling-based, 2) rational/analytical, or 3) neither (the "neither" category included statements made for the purpose of clarification or elaboration that did not add any new content related to System 1 or System 2 processes as well as off-topic statements).

For this portion of the analysis, we coded a small excerpt from each transcript. The excerpt I selected was the portion of the interview during which participants responded to the question, "What were you most aware of during and after the interview?" This question was selected as the basis for our analysis because it had been designed specifically for the purpose of eliciting whichever details participants had attended to and recalled from the time during and after the interview. It was hypothesized that participants who engaged in the reflection would have been particularly attentive to System 1 processes and therefore more likely to mention feelings or intuitions in response to an open-ended query such as this. As discussed previously, this question was deliberately crafted so as to be sufficiently open-ended that it would not directly prompt participants to discuss thoughts or feelings but would allow them to respond with whatever information was most salient for them. In order to ensure uniformity across all participants and to reduce the impact of researcher bias, I was careful to select only the portion of

each interview that was uttered in direct response to this question. In the few instances that I had offered a restatement for clarification purposes, any resulting comments provided by participants were not included for coding purposes.

We began by coding only a small percentage of what we intended to code so that discrepancies could be addressed and any differences of opinion resolved before coding the remaining transcripts. Consequently, we decided to code one transcript at a time until we felt we had addressed any glaring differences of opinion that might contribute to recurring discrepancies. Once we felt we had accomplished this, we intended to code all of the remaining transcripts.

After independently coding the first transcript, two discrepancies were noted. The researcher and second coder discussed these discrepancies and arrived at a consensus for each one. One of these discrepancies centered on the fact that a similar statement was made at two points in time. It was subsequently resolved that repetitive statements would be coded only one time as a rational or intuitive response, and that repetitions of the statement would be categorized in the "neither" category. This decision was made because we reasoned that the numbers derived in this way did not misrepresent the data as including more memories of intuitive or rational data than were actually present. Throughout the negotiation process, power dynamics were paid particular attention and were explicitly addressed before moving forward. Both analysts agreed that no one person's opinion should hold more weight than the others' and that consensus would only be reached when both coders agreed equally with the same conclusion.

After arriving at consensus with respect to the first transcript, both analysts independently coded the second transcript. This time, no discrepancies arose. The coders then proceeded to independently code all of the remaining transcripts. Upon completion, five discrepancies were

discovered, resulting in an interrater reliability of 96.6%. Each discrepancy was then discussed until both coders agreed that a consensus had been reached.

One of the discrepancies dealt with whether a sentence consisted of a single complete thought or two distinct thoughts and was ultimately resolved in favor of the co-analyst. The portion of the transcript in question consisted of the following quote: "Okay is that job something I want to do? No, I don't think so but maybe something close." Originally, I had coded this quote as constituting a single unit of meaning (deciding the job was not quite what she wanted) and had coded it as a System 2 statement while my co-analyst had coded each sentence separately, interpreting each sentence as a distinct System 2 statement (the first sentence as a query to oneself and the second sentence as a response). Ultimately, it was decided that the two closely-related thoughts would be coded as two distinct thoughts since the co-analyst persuaded me that either thought could have occurred in isolation without its counterpart.

For the remaining four discrepancies, consensus was reached through dialogue about whether or not the particular statement represented System 1 or System 2. Throughout these discussions I was attentive to my biases and was sensitive to the possibility that I might be inclined to interpret statements from the treatment group as belonging to the intuitive (rather than the rational) category. As a result of this concern, in instances where I was uncertain and the other analyst was confident that the statement was a rational one, I defaulted to his position. Ultimately, three of the five discrepancies were resolved in favor of the second analyst while the other two were resolved in my favor.

To illustrate our process, the following statement, made by a participant in the treatment group, originally led to a discrepancy in coding: "I need to open my eyes to see that there are actually a lot of opportunities and information I don't know, so maybe if I open my eyes and do

some research, I will find there are a lot of opportunities there." Initially, I had coded this statement as belonging to System 1 because it seemed to suggest an automatic and emotional reaction of hope and excitement. My co-analyst, however, had coded the statement as a System 2 statement, believing that it reflected a conclusion based on a finite amount of language-based data gathered in the informational interview. Eventually, after referencing contextual information from other portions of the interview which suggested the interviewee had learned specific information in the informational interview which could lead her to this conclusion through analytical means, my co-analyst effectively argued that I was inferring an underlying System 1 cause for something that was communicated in terms of System 2 (consciously recognizing opportunities that she learned about in the interview). This discrepancy was therefore resolved in favor of the co-analyst and the quote was categorized within System 2.

To give the reader an overview of how several actual interviewee statements were coded, the table below displays the three categories we utilized for coding the transcripts along with quotes from the excerpts we coded that exemplify each category.

System 1 Fast, Parallel, Automatic, Effortless, Associative, Emotional	**System 2** Slow, Serial, Controlled, Effortful, Rule-governed, Neutral	**Neither** Neither System 1 nor System 2, or a clarification, off-topic statement, or a repetition of a previous statement
"It seemed a little bit overwhelming to me." "I just felt a little bit of tension in my abdominal area." "I feel like she was a little nervous" "excited curiosity, like wanting to know more" "I think I was most aware of how I was feeling afterwards, which was positive…" "I guess I kind of felt excited in	"I was just reflecting on what we'd talked about and what that would mean for me later on." "I had my own expectations and then I was hearing something else." "The information I was taking in is something I couldn't get in a class, so it was really helpful like that." "I was aware of questions that would arise and [my]	"Well before and after I talked to my friend who worked in HR, so I guess my conversation with her." "I actually talked to – and he was like 'hold on' and found this old sheet of paper that had a list of like 52 names and he says, 'these are all the informational interviews I've done in my life." "Because we'd discussed

a way." "Just kind of the feeling of relaxing"	assumptions that were confirmed or disconfirmed." "Some of my thoughts that were more like questions: 'Do I need to have a personality like hers to be in her position?' or, um, 'Would I fit well?'"	how… it was in the book, okay 20 minutes, don't take more than 20 minutes."

Once we had completed the coding, we tallied up the total number of System 1 (intuitive/emotional) versus System 2 (rational/analytical) statements present in each excerpt. I then calculated a proportion for each group by adding up the total number of intuitive statements made by participants in that group and dividing it by the total number of rational and intuitive statements made by participants in that group. The proportions from each group were then compared using a z-test of proportions (Howell, 1999).

Finally, participants' intuition- and feeling-related comments in response to the question, "What were you most aware of during and after the interview?" were summarized and placed in tables to provide readers with an overview of the content of the responses and as accurate of a depiction of the qualitative data as possible. The data are displayed in two separate tables: feelings recalled from the period of time *during* the interview and feelings recalled from the period of time *after* the interview.

Analysis for Question 2. This portion of the analysis was the most involved and time-consuming. This phase of analysis began during the interviews themselves and continued to unfold through the process of transcription. Both during the interviews themselves and while transcribing interviews, I began to notice differences in the content of the responses I received from participants in each group. During the transcription process, I began to take notes about comments that piqued my curiosity and to record some of my thoughts and reactions to

interviewees' responses. I also added a section of notes at the bottom of each transcript of things that stood out to me about that transcript, statements that seemed to echo statements made in other transcripts, and any other striking thoughts or reactions I had while re-listening to the follow-up interview.

After the process of transcription was complete, I created an excel document into which I pasted participant responses to each of the questions I asked during the interview. This enabled me to focus in on portions of each transcript and to more easily compare responses to the same question across transcripts. In my analysis, I took an open coding approach (Gibbs, 2008) in which I sought to maintain a high degree of fidelity to the actual content of the participants' responses so that I could minimize the extent to which I projected my own ideas onto the transcripts. In accordance with an open-coding approach, I summarized participant responses to each question in the excel document and conducted line-by-line coding for each transcript.

Through this process, I noticed several patterns in participant responses that piqued my curiosity. In reaction to these observations, I formed new columns for my excel sheet where I began tracking this additional content that interested me (e.g., the frequency with which interviewees mentioned feeling a sensation in a specific body part when talking about their experience after the interview). Additionally, I kept notes about ideas I had for possible themes and about some of the similarities and differences I noticed across participants.

After summarizing participant responses and completing line-by-line coding for each transcript, I utilized the "cutting and sorting" method (Bernard & Ryan, 2010) to identify themes. In determining which quotes to select from each transcript, I gravitated toward quotes that struck me as particularly interesting or exceptional in some way as well as quotes which reflected ideas that were repeated across numerous transcripts. I attended to validity concerns by being

deliberate about searching for data that could contradict my initial ideas about how the PER would impact participants. For example, I was particularly attentive to quotes that refuted my hypothesis that participants in the treatment group would be relatively more attentive to intuitive information.

Another measure I took to enhance the validity of my findings was to conceal from myself during the sorting process which group a particular participant quote came from. In order to accomplish this, as I cut quotes from each transcript, I marked the group to which the quoted participant belonged on the backside of each slip of paper. I took this measure because while I wanted to be able to compare the frequency with which themes were discussed by members of each group, I also wanted to account for my bias toward noticing differences across the groups, and I hoped this would reduce the likelihood that I might form categories or assign quotes to categories in a way that would exaggerate group differences. In practice, this was less effective than I had hoped as I had already become quite familiar with the data and, in many instances, remembered which participant made a particular comment. Furthermore, the content of participants' responses occasionally made evident which group they had been assigned to. Nevertheless, for a considerable portion of the data (approximately 70% of the paper slips) I was not certain which group the quote represented, and I believe that taking this measure did ultimately reduce the degree to which my preconceived ideas biased the process of forming categories and generating themes.

As I began sorting, I grouped quotes together that seemed similar in some way. After grouping two or more quotes together, I devised a temporary label or, in some cases, two or three tentative labels to describe the category that was formed. I continued to do this until each and every quote had been assigned to a category. Throughout the sorting process, I frequently re-

assigned quotes to new categories as they emerged, and I gradually refined the labels for my categories until I felt they optimally described the nature of the data present in each category. After assigning each quote to a category, I re-read the quotes within each category and considered alternative placements for quotes that did not seem to fit as well within a given category. Next, I examined the resultant categories and looked for relationships among categories. For categories that struck me as closely related, I grouped them together and formed an overarching theme. For example, I grouped the categories "attention to feeling," "layers of feeling," and "enhanced feeling" together within the theme "Emotional Awareness." Other categories were so similar that I opted to combine them into a single category.

Because my second research question focused largely on differences across groups, I made comparisons across groups by looking at the frequency with which themes were expressed by participants from each group as well as examining qualitative differences in the nature of the comments. I first compared the frequency with which individual themes were discussed by members of each group by transferring the marks indicating group membership to the front of each quote. For each theme, I tallied the total number of comments made by participants from each group. As it turned out, most themes were strikingly dominated by comments from members of one group or another so that a quick visual comparison made it clear which group members were more likely to express that particular idea. For example, the category "Bodily Sensations" consisted entirely of comments made by participants in the treatment group, whereas the category "New Information" had six comments from individuals in the control group and only one comment from an individual in the treatment group.

Consequently, I decided to organize my themes and sub-themes based on whether they were expressed most frequently by individuals who completed the PER or by individuals in the

control group. For two of the themes, however, the comments were divided equally among participants from both groups; I therefore developed a third category for themes that were equally evident in both groups.

For example, within the sub-theme "attention to feeling," the few comments that made their way into this category that were made by members of the control group were markedly different from comments made by members of the treatment group. I therefore made a note of the nature of this difference and attempted to convey this difference in the results section. In an effort to check my bias toward perceiving the intervention as having created differences across the groups, I also contemplated ways that comments made by members of different groups were similar to one another, and I made a point of communicating those similarities in the results section as well.

Results

Introduction to Results

The present study was designed to address the following two questions: 1) How does completion of a Post-Engagement Reflection alter participants' attention to and memory of intuitive versus rational data gathered during informational interviews? 2) Are there noticeable differences between the experimental and control groups in participants' descriptions of the informational interview and the span of time immediately after the interview? Accordingly, the study's results are presented by question.

For the first question, the results from the quantitative analysis that compared the proportion of intuitive statements made by participants in each group are presented. In order to further elaborate on the differences between groups that were discovered in the process of coding, descriptive statistics and qualitative data in the form of quotes are presented. The results

for the second question begins with an exploration of general observations about the way participants' reports of their experiences differed across groups. Next, the themes that were discovered are presented in three sections: themes dominated by the treatment group, themes dominated by the control group, and themes equally evident in both groups. Each of these three sections is further sub-divided into themes and subthemes. The themes and subthemes are defined and described, and quotes that are particularly illustrative of the themes and subthemes are provided. Finally, numerical comparisons are presented to portray the relative frequency with which members from each group made statements reflective of each theme and subtheme.

Question One

The analysis for question one addressed the following question: "How does completion of a Post-Engagement Reflection alter participants' attention to and memory of intuitive versus rational data gathered during informational interviews?"

As described in the method section, this question was addressed primarily through a quantitative analysis that involved calculating a proportion to represent the number of intuitive versus analytical statements made by the participants in each group. This was done by counting the total number of System 1 (intuitive/emotional) statements present in the excerpts from a given group and dividing them by the number of System 1 plus System 2 (rational/analytical) statements present in the excerpts from that same group. Twenty-four out of 32 of the statements made by individuals who completed the PER were coded as intuitive statements, resulting in a proportion of .75 for the treatment group. For the control group, 5 out of 24 statements made by individuals in this group were coded as intuitive, resulting in a proportion of .21.

A z-test of proportions (Howell, 1999) with a significance level of .05 was conducted utilizing these proportions, with the total number of intuitive and rational statements for each

group serving as the sample size. The results of this analysis revealed that the proportion of intuitive statements made by the treatment group was significantly greater than the proportion of intuitive statements made by the control group ($z = 4.002$, $p < .001$). In other words, the responses from participants who completed the Post-Engagement Reflection (PER) were significantly more likely to include intuitive elements than were responses from participants in the control group.

This difference between groups was not simply the result of a few individuals providing exceptionally intuitive responses. Rather, the number of intuitive statements was fairly equally distributed across all participants in the treatment group. In fact, only one of the eight participants in the treatment group failed to mention an intuitive impression related to the interview, whereas three of the eight participants in the control group failed to mention any intuitive impressions. Furthermore, of the participants in the treatment group who made an intuition-related statement, they made between 2 and 6 intuition-related comments each, with an average of 3.4 intuitive comments each; on the other hand, participants in the control group made exactly one intuition-related comment each.

The nature of these comments also differed considerably across groups. The intuitive comments made by individuals in the control group tended to be stated as asides rather than as part of the core response to the question - for example, one participant mentioned off-handedly after an in-depth description of his thought process, “But it also made me like both of those guys more”. On the other hand, a typical intuitive comment from the treatment group was embedded within a series of intuition-related comments and tended to place more emphasis on the feeling. For example, one participant from the treatment group made the following observation, “I felt

like we had common values that we exchanged. And so the person I was talking to seemed pretty transparent about their job. So overall, I felt comfortable. I felt like it was very worthwhile."

Finally, three of the participants in the treatment group gave responses that were dominated by intuition-related statements whereas none of the individuals in the control group gave a response that was comparable in terms of the emphasis placed on feelings or intuition. This difference can be illustrated with a quote that represents the "most intuitive" response from each of the two groups.

Since none of the responses from the control group contained more than one intuitive statement, the response that my co-analyst and I judged "most intuitive" consisted of a single intuitive statement that was included as part of the core response to the question of what the participant was "most aware of" after the interview.

"So during the interview… mostly just trying to be aware that I was kind of paying attention to you know questions as they arose. I had a couple of general things that I wanted to ask, but generally just approached it to allow it to flow naturally, so I was kind of aware of just questions that would arise and assumptions that would be confirmed or dis-confirmed and just things like that, kind of natural flow of the conversation. And then immediately afterwards, that sense of "I have my work cut out for me!" If this is the route that I take with this group, because it's gonna be challenging."

In the above excerpt, the participant's primary recollection of the time after the interview is about "a sense" that she has her work cut out for her. On the other hand, most of her commentary about the time during the interview centers on specific thoughts she was having, and appears to involve more of a linear, analytical thought process (e.g., "questions that would arise and assumptions that would be confirmed or dis-confirmed")

For the treatment group, on the other hand, several of the responses were dominated by intuition-related statements, so much so that my co-analyst and I struggled to reach an agreement about which of the responses was the most intuitive. One of the responses that was among the highest scoring for the proportion of intuitive statements to analytical statements was as follows:

"During the interview, the whole time I was sitting there thinking and stuff – it was excitement. Probably mostly in my stomach where, when something feels right you can feel it inside, you're like this is awesome, this is everything I want to hear. And even as I'm walking the distance to my car I'm like this is just fantastic, and then afterwards when I sat in my car and you actually just sit there and feel how you're actually feeling, that just multiplied it by like a hundred. It was really emphasized sitting there, you like get giddy like a little kid at Christmas."

In this excerpt, an emphasis on feelings and impressions is apparent. The participant also communicates that he perceives the mindfulness activity as playing a role in the degree to which he was aware of his feelings and impressions.

Finally, below I have included participants' intuition- and feeling-related comments in response to the question, "What were you most aware of during and after the interview?" The tables provide a summary of the key ideas expressed by all 16 participants in response to this question. The information is displayed in two parts: feelings recalled from the period of time *during* the interview and feelings recalled from the period of time *after* the interview. On occasions when participants did not mention anything related to intuition or feelings, the participant is included in the table with the phrase "none reported."

Feelings During

Control Group	Intervention Group
1. none reported 2. none reported 3. none reported 4. excited curiosity	1. relaxed and comfortable; felt person interviewed was nervous 2. felt uncomfortable (aware of acting comfortable)

5. none reported 6. job seemed overwhelming 7. felt they were bothering other people who were trying to work 8. none reported	3. sensed that other person was "boisterous, positive, and optimistic" 4. none reported 5. felt "engaged" and "comfortable"; had the sense the person was transparent and that they shared values 6. felt "impressed" by "professionalism" 7. felt amazement and wonderment 8. felt excitement in stomach

Feelings After

Control Group	Intervention Group
1. none reported 2. none reported 3. "It made me like both of those guys more" 4. none reported 5. felt "really glad I did it" 6. "glad" to have done the interview 7. none reported 8. sense of "I have my work cut out for me"	1. excited about new information 2. feeling of relief, sensation of relaxing 3. happiness, empowerment, "I-can-do-this attitude," positive attitude 4. comfortable, relaxed, positive 5. tension in abdomen 6. "feeling good," proud of self, pleased with outcome, stressed about unrelated tasks 7. excited, happy, charged, satisfied, relieved 8. felt "fantastic," "giddy like a little kid at Christmas"

Question Two

The analysis for this portion of the study centered on the question: Are there noticeable differences between the experimental and control groups in participants' descriptions of the informational interview and the span of time immediately after the interview? In order to address this question, the transcripts were analyzed and compared to one another as a whole and themes were generated to describe the distinct experiences of participants from each group.

In analyzing the transcripts, several differences became apparent between the treatment and control groups. Despite utilizing a structured interview with identical prompts across all participants, the length of time participants spent responding to my questions and the type of information that was spontaneously interjected into conversation varied systematically across groups.

For the control group, the follow-up interview lasted an average of 9 minutes and 15 seconds, and the type of information they tended to interject into the conversation was generally background information about how they met the person they interviewed or details about unrelated events that occurred surrounding the interview (for example, one participant mentioned getting a parking ticket while another mentioned having a conversation with a friend before the interview).

For the treatment group, on the other hand, the average duration of the follow-up interview was 13 minutes and 55 seconds, and the information they tended to interject into the conversation was usually related to their experience of the mindfulness activity. For example, one interviewee described in detail all of the sensations she experienced during the mindfulness activity, what she drew, and what several elements of her drawing symbolized.

In general, participants commented on the informational interview process as being stressful because of unknown elements about how the interviews would go, anxiety about how they would be perceived, and a sense that they might be intruding on another person's valuable time. Overwhelmingly, however, participants remarked that they were glad they had completed the interviews because they learned information they would not have otherwise learned and were pleasantly surprised by how well they were received by the individuals they interviewed.

Themes. A total of 10 themes emerged through the process of analysis, most of which had two or more subthemes. The 10 themes that emerged were: memory aid, intuition, self-encouragement, emotional awareness, emotions and the body, in my head, taking pause, time to process, self-reflection, and focus on feelings. Themes and subthemes were assigned to one of three categories based on how often they were expressed by participants in each group: treatment group themes, control group themes, and common themes.

In total, there are five themes dominated by the treatment group, three themes dominated by the control group, and two themes that were equally evident in both groups. The themes and subthemes are organized by category and will be presented in the following order: treatment group themes, control group themes, and common themes. At the conclusion of this section, a table is included that depicts the total number of comments represented by each theme as well as the number of participants from each group who made comments that fell within each theme.

Treatment group themes. The themes dominated by the treatment group were: memory aid, intuition, self-encouragement, emotional awareness, and emotions and the body. Each of these themes has between two and four subthemes. In this section, each theme and subtheme is defined and numerical information about the total number of quotes categorized within each theme is provided as well as the number of participants from each group who made comments related to that theme. Additionally, each theme and subtheme is illustrated with quotes selected as being particularly representative of that theme or subtheme.

Memory aid. The theme "memory aid" encompasses comments made by participants that suggested that the Post-Engagement Reflection enhanced their memory of the informational interview or events surrounding the interview. Within this theme, I identified two subthemes:

improved memory of the informational interview and improved memory of inner experiences post-interview.

Every one of the comments categorized within this theme was made by a member of the treatment group, with a total of four of the eight participants assigned to the treatment group mentioning that some aspect of their memory was improved as a result of completing the activity. For comparison purposes, none of the individuals in the control group mentioned feeling that their memory had been improved in any way. It is worth noting that none of the questions asked as part of the interview protocol were related to memory. Rather, participants tended to mention their sense of improved memory in response to one of the two questions, "Was this activity helpful in some way?" and "Did completing this activity impact your experience of the interview?"

Improved memory of the informational interview. Within the subtheme "improved memory of the informational interview," three participants mentioned that their memory of events within the interview was improved by engaging in the PER. In response to the question, "Was this activity helpful in some way?" one participant made the following observation:

> *"The thinking about things and then reflecting on my body and everything, it did help me remember it later on when I was typing things up and writing it for a report. So I think that was helpful just becoming more aware of the experience and having more mindfulness of how I felt and what went on."*

Here the participant is referring to a class assignment that asked the students of EPSY 846 to reflect on their experience of their informational interviews. Interestingly, one of the pilot interviewees made a strikingly similar remark, and added that when she completed the same assignment for her other informational interviews (after which she did not complete the PER),

she found it considerably more challenging to recall specifics about the interview itself or about her personal reaction to the interview (J. Kratky, personal communication, November 10, 2015).

Other participants said: "I just feel it's a good way to help me to remember something," and " I think it helped me remember the interview and what she was talking about more." One person suggested that her improved memory may have been the result of anticipating the mindfulness activity associated with the PER:

> *"Maybe it affected just knowing I was going to be taking a moment to just relax and become more aware of it. So maybe there were moments – I mean I was already thinking 'I gotta remember that, I gotta remember that' – but maybe I was doing that more because I knew I was going to be thinking about the experience afterwards."*

Interestingly, one of the participants suggested a link between improved memory of the interview and greater motivation to pursue more occupational exploration:

> "*It helped me to increase my memory of the important things from the informational interview [which] can promote me to do something next like this."*

Improved memory of inner experiences post-interview. Within the subtheme "Improved memory of inner experiences post-interview" are included comments related to participants' memories of their thoughts and experiences after the interview. While a couple of participants explicitly mentioned an improved *memory* of the moment after the interview, several other participants simply suggested that they were more focused on or attentive to their inner experiences. Since attending to an event is the first step toward encoding it into memory, when participants mentioned enhanced attention to a particular experience and were also able to vividly describe what they recalled, I interpreted this to mean that they had improved memory of the experience in question. Accordingly, I included some of those comments within this theme as

well, pairing comments from the same participant together so that the reader can judge whether or not this pairing of responses does indeed indicate improved memory.

One of the participants who explicitly addressed enhanced memory of the post-interview experience reported the following:

> *"I think it definitely helped me remember the physical component [of what I was experiencing after the interview]."*

As for a typical participant response that involved mentioning enhanced attention (rather than memory) but which was supplemented by specific recall of the experience, one participant stated:

> *"I think I would have reflected alone just of the interview itself probably as I was going home anyway, but to force myself to sit there, not driving, and think about everything else […] help[ed] me reflect more on my emotions and my body and what I was experiencing in that moment which I wouldn't have otherwise."*

Later in the interview, that same participant described the physical sensations she recalled from her time after the interview:

> "*When I get nervous my hands get really – um I have to move my hands pretty much constantly and so they also get really hot, so I was noticing that for sure. And I guess, physically, where I feel happy emotion would be my heart. So I tried to describe that in the picture too just like happy heart radiating."*

This participant asserted that she was more focused than she ordinarily would have been on her emotions and where those emotions arose in her body, and she was able to specifically recall the sensations in her hands and heart one week after the experience. Finally, the participant specifically stated that she "wouldn't have otherwise" focused on her emotions or her body.

Collectively, these statements suggest that the participant's memory of her experience after the interview was better than it would otherwise have been.

Intuition. Intuition seemed to be the most accurate label for what participants described as "a sense," "a feeling," or a preference that they could not justify or explain in rational terms. Furthermore, the participants themselves tended to use this vocabulary, referring to their "subconscious" and their "intuition" when making the types of comments that are categorized within this theme.

A total of 15 quotes from 9 different participants were categorized under the theme of intuition. The quotes that were consistent with this theme tended to involve explicit reference to a feeling that something was meant to be a particular way or an immediate appraisal of something as good or bad, desirable or undesirable, without any elaboration as to why. Of the 15 quotes, 11 came from participants in the treatment group. Nevertheless, four of the quotes came from participants within the control group, and those quotes are also explored here with particular attention to any similarities or differences in the way individuals in the control group discussed intuition compared to their counterparts in the treatment group. Within the theme of intuition, there were two subthemes: "knowing without reason" and "trusting one's intuition."

Knowing without reason. The subtheme of knowing without reason consisted of quotes that involved expressing a preference about something or a strong conviction that something was a good or bad choice without an explanation as to why. Two of the participants in the treatment group seemed to be particularly in touch with their intuitive reaction to the informational interview. One of these participants, who had a very positive experience in the interview, made the following observation:

"During the interview, the whole time I was there – it was excitement, mostly in my stomach where, when something feels right you can feel it inside, you're like 'this is awesome! This is everything I want to hear!'"

This particular participant repeatedly used the phrase "feels right" throughout the follow-up interview to refer to a sense that the job felt like a good match for him. In fact, he used this phrase so frequently that he commented on it. "It just felt right. I've said that a lot. You're gonna listen to the recording and you're gonna be like, 'he said it felt right.'" At no point in the follow-up interview did the participant elaborate about why he felt this job was right for him; instead, he expressed an exuberant confidence that this job was one he wanted to pursue: "It was really kind of like fist-pumping, this is exactly what I want to do."

Another participant in the treatment group expressed a similar sentiment in that she found she felt very positively about one of her interviews. This participant, however, seemed somewhat uncomfortable about having a preference without a rationale and subsequently wondered aloud about possible reasons for this preference:

"Compared to my second interview, I just felt this interview was better. But I don't know why. Maybe he gave me a lot of information, but [in the] second interview we talk[ed] more about how to improve my skills and my qualification for a future job. So I'm not sure why, but I just felt better about this interview."

This particular quote seems to reflect the separateness of System 1 and System 2. It's as if this participant's System 1 has made an automatic ruling while System 2 is struggling to justify the decision.

Unlike individuals in the control group, participants in the treatment group who talked about intuitive preferences occasionally referred explicitly to their intuition:

"I definitely knew I was smiling. I definitely knew I felt good in my heart, and I definitely knew I was feeling intuitionally right,"

Interestingly, the instances of "knowing without reason" that were expressed by individuals in the control group were qualitatively different from those mentioned by individuals in the treatment group. Rather than remarking that the job "felt right" or referring explicitly to their intuition, participants in the control group expressed disliking elements of the job or having automatic negative judgments about it. For instance, one participant remarked, "Right away when he said he works with Greek life, I was like, 'Okay, no. Not this job.'" Another participant from the control group who seemed exceptionally tuned in to her gut-level reactions stated:

"About this job in particular I don't know if I could put a particular feeling on it. I would say it was just negative because it seemed very overwhelming and really stressful, so just negative feelings in general – not about the interview process at all, but with that [job] I was just kind of shying away from it after the interview. It seemed really stressful."

The level of attention to intuitive data in this remark represents a definite outlier for the control group. It is interesting, however, that it follows the trend of being focused on negative rather than positive aspects of the job. Indeed, none of the participants from the control group mentioned a positive intuitive reaction to their informational interviews, though several of the participants communicated a positive evaluation of the job or interview (e.g., "[the job] met the majority of things that I had on my list of the most desirable job position").

Finally, because the data can be best understood by placing it within the context of the interviews as a whole, it is worth noting that the comments from individuals in the control group differed from the comments made by individuals in the treatment group in the amount of focus

that was given them. Those individuals who mentioned intuitive data in the treatment group tended to emphasize the way they were feeling about the job and to circle back to their impressions repeatedly throughout the interview, as in the case of the participant who reiterated several times that the job, the interview, and his experience after the interview were characterized by intense feelings of excitement and positivity. This interviewee repeatedly mentioned that the interview and the job "felt right". On the other hand, the quotes from the control group that represented intuition were generally mentioned in isolation. For example, the individual in the control group who identified an instant negative reaction to Greek life simply mentioned his reaction in passing before elaborating on elements of the job that he thought would fit well with his academic interests.

Trusting one's intuition. This subtheme refers to comments that were specifically about the activity participants completed after the informational interview. This subtheme was of interest to me because it provides insight into how participants experienced the intervention itself. All of the comments grouped within this theme communicated a sense of *knowing* what to write down on the PER worksheet or the analog-type item without the need for rational analysis These comments suggested that participants experienced a gut-level knowing in relation to the reflection, suggesting that at least some of the participants drew upon their intuition to complete the activity.

One of the participants in the treatment group asserted that the mindfulness activity helped her become more certain about what she was feeling and how she would depict her feelings:

"I feel like [the minute reflection] helped me to kind of solidify. Because at first I was looking at it and I was like, I don't know what I'm gonna put on there… and then after I did the minute reflection thing, it really settled in."

Another participant who completed the PER reflected that:

"[What I drew here] was more like using my subconscious mind to let out what I was feeling and experiencing, and so I feel like I trust that drawing more than I trust the thoughts in the back of my mind."

This quote seems to reflect the participant's sense that her "subconscious" or intuition is both distinct from and more authentic or trustworthy than the "thoughts in the back of [her] mind." Importantly, her comments also suggest that completing the PER helped her to gain access to the content of her "subconscious."

While most of the comments related to intuition were made by individuals in the treatment group, one of the participants in the control group also seemed to have accessed her intuition in marking down how she felt about the interview:

"I thought it was actually really easy to visually put the line on [the paper], so I don't know, maybe I'm good at visually representing my feelings. I just felt sure that it would go right there."

This remark, like the others, seems to reflect a certainty or knowing that arises out of an experience (in this case the informational interview) rather than as a result of a linear thought process. Unlike the participants in the treatment group, however, this individual made an internal attribution ("maybe I'm good at visually representing my feelings") rather than crediting the activity itself with helping her get in touch with her intuition.

Self-encouragement. The quotes that were grouped within this theme all refer to ways the participants utilized the activity to motivate or reassure themselves. Three participants in the treatment group and one of the participants in the control group mentioned using the activity as a form of self-encouragement. To reflect some of the variation within this theme, it is divided into the subthemes "reminder to self" and "motivation."

Reminder to self. One particular interviewee mentioned having several doubts about her ability to obtain a job like the one she explored through her informational interview. She also communicated, however, that those doubts arose some time after the interview, which was itself a very positive experience.

> *"I learned that I have to reinforce myself and say "I can do this" if I'm challenged with seeing opportunities that I really want, because I'm really positive and optimistic about it at first but then I have doubts, like 'well, can I really do it?'"*

She then stated that she found it reassuring to look back at her drawing, which reminded her about the positive feelings of "empowerment" and "able to accomplish" that she experienced immediately after the interview.

> *"I think it really impacted the experience I was having with myself after the interview. Being able to organize my thoughts and feelings in a drawing that showed me and reminded me that this is doable, don't forget about this. This is how you felt, remember this."*

This participant's comments all suggested a sense that her feelings about the interview were valuable and worth preserving, perhaps even more valuable or trustworthy than her conscious thoughts about the interview. In fact, this is the same participant who remarked: "I feel like I trust that drawing more than I trust the thoughts in the back of my mind."

Not only did the participant feel reassured by her drawing in the moments immediately after the interview, but she also mentioned referring back to her drawing from the PER as a way to actively reassure herself:

> *"The [PER] let me get out some of these subconscious thoughts and feelings on paper and look at it and reflect back and say, 'this is what I'm actually feeling, and this job is something I can do, and I should be proud of where I am and what I can accomplish.'"*

Another participant who mentioned using the PER as a reminder to herself about the informational interview experience stated the following:

> *"It was definitely helpful after the interview to put these lines on the body that represents me and to show me and remind me throughout the week when I looked back at it, what I was feeling and thinking and how I felt about the experience and to keep it on my radar, not to let that informational interview and that information slip away as I progress through my degree."*

In talking with this participant, she communicated a sense that her drawing reflected valuable data that she had gathered during the interview and that looking back at her drawing helped her to recall those images and memories from the experience. Symbolically speaking, the PER was a souvenir that could summon vivid details from a past journey that might otherwise have been forgotten.

Motivation.

One participant referred repeatedly to the fact that she felt the activity enhanced her motivation to pursue more career exploration:

"I'm a person who is very disciplined, so after doing something like this, if I want to recall this memory and expand on how it was good, I mean maybe I need to do something next, so that's why I just feel that this activity helped me to remember to schedule – or first to recall my memory, second to schedule the next step."

This participant seemed confident that there was some link between her improved memory as a result of completing the PER and having motivation to move forward as she brought this up on three separate occasions. On another occasion, she stated:

"It helped me improve my memory of the important things from the informational interview and prompted me to do something next like this."

It was unclear whether the participant meant that she felt motivated to complete another informational interview or to engage in career exploration generally. Either way, it was evident that she experienced the PER as a tool for self-motivation.

Interestingly, one of the participants from the control group also made a remark that suggested a link between completing the activity and motivation to complete more informational interviews. Several participants from both groups mentioned wanting to conduct more informational interviews in the future as a result of having had a successful and valuable experience with the interview itself. This comment, however, differed from others, in that it suggested that the activity after the interview played a role in this sentiment:

"Thinking more about my mental state afterward was interesting and actually got me that much more excited so that I plan on doing more (informational interviews) next semester."

Though this participant does not clearly spell out the connection for us, he leaves the impression that reflecting about his "mental state" increased (or made him more aware of) his

excitement, thereby enhancing his motivation to complete more informational interviews. While this remark shares certain similarities with comments made by participants in the treatment group about feeling motivated, unlike participants in the treatment group, this participant pays minimal attention to this aspect of his experience, mentioning it in a single sentence in passing rather than as a central part of his experience with the activity.

Emotional awareness. The theme "Emotional awareness" included comments that referred to being more in touch with one's feelings. This theme also included comments about participants' experiences of specific feelings such as excitement or stress that were particularly descriptive and therefore suggested enhanced emotional awareness. Of all the themes identified, this theme was the most robust with a total of 19 quotes, four subthemes, and lengthy comments within each subtheme that discussed emotion in depth. Of the eight participants in the treatment group, six made statements that were categorized as representing "emotional awareness". In contrast, only two participants in the control group made comments that were categorized within this theme. Additionally, the quotes from the control group were noticeably less descriptive; they mentioned particular feelings but did not describe them in as much detail. The four subthemes I identified were as follows: "feelings I would have missed," "layers of feeling," "enhanced feeling," and "feelings of excitement."

Feelings I would have missed. This subtheme utilizes wording that mirrors participants' wording. I chose to preserve participants' phrasing in naming this subtheme because the degree of similarity with respect to wording across numerous participants was striking. Across numerous participants, the individuals I interviewed made comments like: "If I hadn't done this, I wouldn't have noticed" or "If I hadn't done this, I would have gone on with my day without realizing…" This wording was interesting to me because it reflected participants' sense that

some element of their experience *would have been* lost were it not for taking a moment to pause and complete the activity.

Within this subtheme, there were a total of five quotes, four of which were made by members of the treatment group. One quote which captures the nature of the comments categorized within this theme was made by a participant who noted that the activity helped put him in touch with the fact that he was experiencing tension related to the interview. On this topic he stated:

> *"I probably wouldn't have even thought about feeling a little bit tense, that little bit of tension if I hadn't done the activity. I would have jumped in the car and driven off."*

After noticing this tension, the participant speculated about the reasons for this tension in the follow-up interview: "I think I was a little bit tense about getting all the information that I wanted to and not overstaying my welcome." For this participant, noticing tension that he might not otherwise have noticed translated to increased personal and emotional awareness as reflected by his concluding remark:

> *"I usually feel like I'm a fairly flexible person and have a lot of adaptability because what I've done most of my life required that, so I usually think I'm pretty easy-going, go with the flow. So it kind of surprised me a little bit that I would still carry that little bit of tension from that.[…] so it made me aware that I can pick up tension when I'm not aware of it."*

In addition to feelings of stress or tension, participants talked about noticing excitement and other positive emotions they might otherwise have missed. For example, one participant describes discovering the intensity of his positive emotions through the mindfulness activity:

"I already had those feelings but I didn't realize how strong they were until I sat there and was like, 'wow, this is – that was awesome. It was – it was just awesome."

Layers of feeling. This subtheme consisted of only two quotes, both of which were made by participants in the treatment group. While this category consisted of relatively few quotes, these quotes communicated an idea that was sufficiently unique to merit its own subtheme. The idea represented by this subtheme is about delving into one's emotions to discover their complexity.

One of the participants who communicated this idea in a particularly eloquent way, and whose comments were the inspiration for the name of the subtheme, described it as follows:

"I got out of it a better comprehension of what my happiness was. Not just excitable, it was – I was relieved I was on the right path. And I was a bit happy-nervous or excited-nervous, and it gave me more layers to the cake […] Rather than 'Oh, I'm excited!' and that's all I could say, or 'I'm happy.' It's like I'm happy with certain additions, and I think the exercise helped me add the additions and really get a fuller understanding of what I was actually processing. You know, less surface level."

This participant felt the exercise gave him a better, more nuanced understanding of his feelings after the interview. He suggests that without the activity, he might have walked away knowing only that he was "happy" or "excited" without having the opportunity to fully experience the joy of being "on the right path" or the anxiety that were inherent parts of his excitement.

Enhanced Feeling. The subtheme "enhanced feeling" included comments about a particular feeling being intensified as a result of completing the activity. This subtheme consisted of comments made by four different individuals, all of whom were in the treatment group. One

quote which exemplifies this subtheme was made by an individual in the treatment group who had a very positive experience both in the interview and during the post-engagement reflection. He described his experience during the time after the interview as follows:

> *"Afterwards when I sat in my car and you actually just sit there and feel how you're actually feeling, that just multiplied it by like a hundred. It was really emphasized sitting there; you get giddy like a little kid at Christmas. "*

This participant described feeling happy during the interview and explained that the mindfulness activity "multiplied" those feelings of happiness. In other words, he experienced a more intense version of what he might otherwise have felt. He explored this idea further, suggesting that it may have been due to his attention being focused on the feeling rather than distracted by thoughts or external events:

> *"Because when you're in the interview itself, you're sitting there asking the actual questions and stuff like that. You're hearing the responses and you have that feeling but you're not really paying a lot of attention to it because you're listening to the answers and thinking about what you're gonna ask next […] but then when you can sit there and just focus on the feelings you can get out of your head."*

Excitement about the future. Comments that reflected excitement about participants' future employment or eagerness to begin working were classified within this subtheme. Interestingly, of the five participant comments that were classified within this subtheme, only one was made by a participant in the control group. A participant comment that exemplifies this subtheme was made by one of the participants in the treatment group:

> *"So actually doing that was like I just want to be at a practicum in a [workplace of interest], which I can't even do my first year. I just want to be in that setting! And that*

got me really excited for it. I went home and e-mailed the people at the [workplace] that were in charge of the [practicum] program, like can I – can you switch it – can I go there for practicum?"

This participant felt so much excitement about the prospect of working that he was compelled to take action to make his career dreams a reality, even despite some institutional obstacles to doing so.

Several other participants made similar comments about how they were "excited to move on to the next level". One person described feeling "charged" or energized to move toward their career aspirations. Participants in the treatment group also expressed feeling "inspired" after talking with someone in the profession they intended to pursue or alluded to feeling hopeful. In response to the question "What were you most aware of after the interview?", one participant responded in a way that captures the energetic quality associated with these remarks, rattling off several positive, future-oriented emotions:

"[Afterwards I experienced] feelings of happiness, empowerment, possibilities, bright future, able-to-accomplish, I-can-do-this sort of attitude, positive attitude."

After her interview, this participant was excited for her future and keenly aware of feeling both hopeful and self-efficacious with respect to her career goals. Of note, this participant was the same participant who mentioned using the PER as a way to get in touch with these positive "subconscious" feelings.

Emotions and the body. During my initial analysis of the transcripts, I was struck by a marked contrast between the control versus treatment group with respect to whether or not participants described physical sensations or mentioned specific body parts. This theme seemed to jump off of the transcript pages unaided, and the difference between the two groups was

extremely pronounced. Consequently, early in the analysis process, I began keeping a record of whether or not individual participants mentioned specific body parts and, if so, which ones. Additionally, in the process of cutting and sorting, I noticed numerous comments in which participants either described abstract sensations that occurred within their bodies or connected their emotions to specific locations in their bodies.

Ultimately, this gave rise to a theme that consisted solely of comments made by members of the treatment group. In total, 12 quotes by 6 participants, all of whom were in the treatment group, were categorized within this theme. To reflect the difference between comments that involved a specific, concrete sensation versus comments that described an abstract feeling, this theme is divided into two subthemes: "physicalized emotions" and "abstract sensations."

Physicalized emotions. This subtheme encompasses quotes about locating an emotion within a particular body part or about experiencing a specific, localized physical sensation. Participants tended to talk about their physical experiences in response to the questions, "What were you most aware of after the interview?" and "Did you learn anything about yourself as a result of this activity?" For example, in discussing what she learned about herself as a result of completing the PER, one participant stated:

> *"When I get nervous I have to move my hands pretty much constantly and so they also get really hot, so I was noticing that for sure. And physically, where I feel happy emotions I guess would be my heart, you know in that area. So I tried to describe that in the picture too, just like a happy heart radiating, because I was happy it went well. So that (the fact that my hands get hot when I'm nervous) was something that I hadn't ever taken the time to realize about myself."*

Typical of these types of comments, this participant mentioned more than one feeling (nervousness and happiness) and tied those feelings to specific locations within her body (hands and heart, respectively). Across other participants' responses, a whole host of body parts and feelings were mentioned, including tension and anxiety in the abdomen, excitement in the chest, and feelings of relief in the hands, feet, and shoulders.

Abstract sensations. The types of comments categorized within this subtheme tended to consist of descriptions of a feeling that involved images, symbols, or commentary about how difficult the feeling was to communicate. With respect to the difficulty inherent in conveying these types of feelings, one participant stated:

> *"The hardest part was trying to figure out how to express what I was feeling in my stomach. So I – that was just like, I can't, you can't really – yeah. I was going to just scribble on my stomach, but I had like butterflies because [of] anxiousness too. That was the hardest part for me… to draw what was going on in my stomach. But like how do you – when people say it's just a gut feeling, how do you…?"*

In talking about these types of feelings, participants frequently stumbled over their words, stuttered, and generally seemed unsure of themselves, expressing their feelings somewhat tentatively and using phrases like "I guess" and "sort of." For example, one participant remarked:

> *"I guess what I kind of noticed was that my head wasn't swimming or anything…I just felt sort of… light after I did that interview."*

When making these comments, participants seemed to be struggling with self-consciousness about describing their feelings paired with difficulty finding the words to label these experiences. One participant whose comments are particularly illustrative of this subtheme stated:

"I felt weight lifted off of my shoulders. Like I felt pressure there but after I felt it kind of lift off and same with my hands and my feet, just like weight lifted"

Interestingly, a couple of participants mentioned the weight versus lightness dichotomy to convey the sensations they recalled from their mindfulness activity. Other images participants frequently relied on to communicate their feelings were light ("radiating" or "illuminating"), explosions, and expansion versus contraction or feeling "shut down". For example, one participant remarked:

"My happiness was kind of exploding out and then when I sat and closed my eyes, it kind of took shape. And I was like 'Oh, I'm excited!' and I closed my eyes and thought, 'yeah, it's right here,' you know what I mean."

The stark contrast between the two groups with respect to awareness of specific physical sensations can be readily observed in the table below, which depicts the number of body parts mentioned by the participants in each group as well as the total number of participants from each group who mentioned at least one body part.

	Control group	Treatment group
Body parts mentioned (number of participants who mentioned the body part)	eyes (1)	head (2), stomach (2), abdomen (1), shoulders (1), hands (2), feet (1), heart (3), eyes (2), chest (1), brain (2), legs (1)
Total number of participants who mentioned one or more body parts	1	8

Control group themes. The themes dominated by the control group were: Taking Pause, In My Head, and Attention to Feeling. Each of these themes has no more than two subthemes. As in the previous section about themes dominated by the treatment group, each theme and subtheme is defined. Also included are participant quotes that help to illustrate each theme and subtheme and information about the number of participants from each group who made comments related to that theme.

In my head. This theme consists of comments that are analytical in nature. For instance, comments that involve comparing or contrasting jobs or informational interviews. Comments that were categorized within this theme also focused on facts and details related to the job or participants' criteria of what they wanted in a job and whether or not the job they explored fulfilled those criteria. This theme consisted of 13 quotes from seven participants. Six of the participants whose comments were categorized within this theme were from the control group. This theme is composed of two subthemes: "making comparisons" and "new information."

Making comparisons. The subtheme "making comparisons" consisted of quotes made by four individuals in the control group. Quotes were categorized within this subtheme when they involved a direct comparison between informational interviews or between jobs. A participant comment that was typical of this category involved a participant reflecting aloud about why one interview was more helpful than another:

> *"I found it helpful because it helped me think more about okay, why was [the first interview] more helpful, more informational. It wasn't [the second person I interviewed]'s attitude; it was just the lack of time we had together."*

Several of these comments were elicited by the question, "Was this activity helpful in any way?" In response to this question, participants frequently mentioned that the activity prompted them to draw comparisons between informational interviews. For instance, one participant felt that the interview was not as helpful as he would have liked and that the act of marking his feelings about the interview on the analog item helped to make him more aware of that fact:

> *"I wanted to go very high on the positive scale because [my first informational interview] was such a great one and [the second person I interviewed] is a great guy, nothing against him, he was just kind of busy, so it just kind of, so I put it about 75, 80 percent of the way positive. Because they were both extremely helpful but [the second interview] was just too short, so I can't give it a 10 out of 10 just for that."*

The idea of comparing informational interviews to one another was mentioned in other contexts as well. A couple of participants brought this up in response to the final question about any additional comments; one person said it would have been helpful to complete the activity for all of their informational interviews so that they could "visually compare them" in a "more quantitative way".

New information. Comments were categorized within this subtheme when they included detailed factual or analytical information gleaned through the informational interview or participants' reactions to new information gained in the interview. Included within this sub-theme are comments about information that was received positively as well as information participants reacted negatively to.

A typical comment from this category focused on assimilating new information, often information that ran counter to a participant's former understanding about a job. One participant

who expressed being surprised by information that did not fit with her previous conception of the job stated:

> *"It was very different from what I thought it would have been. I thought being a guidance counselor was more about helping students with more social stuff than the academic type of stuff, but to my surprise it was about 80 or 90 percent academic and 10 percent helping them with other stuff."*

This discovery was a central focus of this particular participant's responses in the follow-up interview, and she repeatedly communicated that her conception of the job changed after the informational interview and that she was no longer interested in this particular job because of this new information.

In other instances, participants communicated being pleased about the information they gained through the interview, expressing excitement about discovering job-related information. For example, in talking about a new job that he discovered through the informational interview process, one participant exclaimed: "That's really cool! I didn't know that existed."

Interestingly, participants most often talked about the information they acquired through the informational interview process in response to the question "Did you learn anything about yourself as a result of this activity?" On more than one occasion, the participant redirected this question to discuss information they learned about work. For instance, one participant responded to this question by stating:

> *"I don't know that I learned anything about myself, but I was really interested in what she had to say and I was surprised again that that position did exist at KU and that it was something that I'd be interested in doing and that really closely aligned to my*

skills and interests, so not necessarily about myself, but just kind of surprised in general that something that would be such a good fit was out there."

Of note, the comment from the participant in the treatment group was distinct from the majority of comments within this theme in that it focused on the participant's emotional reaction to the information rather than the details of what were learned. In talking about the information received through the informational interview, the participant related, "It was hard to hear, but it was good to hear. You know, it was good to get this information but it wasn't exactly what I wanted to hear."

Taking pause. This theme consisted of four quotes from four different participants, all of whom were in the control group. The quotes categorized within this theme were about taking a moment to contemplate some aspect of the interview and included mention of reevaluating an initial impression of the interview. The comments within this theme were all very similar to one another in that they involved an initially positive evaluation that was revised to a neutral or negative evaluation. Below is a comment that exemplifies this theme, which was given in response to the question "Was this activity helpful in any way?"

"Having to think about like on a continuum how well did I think it went, that actually caused me to pause and I was first going to [put the mark] all the way to the right (to give a very positive evaluation) but then I was like… well, maybe not."

In this comment the participant seems to suggest that completing the activity prompted him to reconsider how well the interview went. Another participant mentioned that the activity helped her to consider the negative elements of the job more carefully:

"Especially with those words ("positive" and "negative") on the page, I think that was helpful because I was able to identify the positive parts in the interview as a

whole; I was glad I did it, so I still rated it more positive than negatively, but it helped me think about really what I wasn't liking about what they were telling me about that particular job."

This participant's comments suggest that the words on the page she filled out to complete the activity primed her to be more aware – both during the interview and in her evaluation of the interview afterwards – of negative aspects of the job than she might otherwise have been. At the same time, her comments suggest that she was able to maintain a larger, more balanced perspective that accounted for the positive aspects of the interview as well.

Common themes. The themes that were equally evident in both groups were: "time to process," "self-reflection," and "focus on feelings." In the following section, definitions for these three themes are provided as are participant quotes that help to illustrate each theme. Information about the number of participants from the control versus treatment group whose quotes comprised each theme is also provided.

Time to process. This theme consists of comments about having extra time to reflect on thoughts or feelings related to the interview. The title for this theme was borrowed from the participants themselves, several of whom used the term "process" in describing their experiences. Seven quotes from seven different individuals comprise this theme. Like all of the themes within this category, the number of participants from each group who made comments related to this theme was roughly equivalent, with three of the comments made by members of the treatment group and four made by members of the control group.

One participant comment that was typical of the comments in this theme was made by a participant from the control group:

"It was useful to kind of reflect on [the informational interview] and actually think about my feelings about it, because I didn't do that with the first [informational interview]. So to take a moment to assess, how did this go, how do I think that it went? So I think it's just good for fostering a bit of awareness."

Despite considerable overlap between the treatment and control group in the comments within this theme, in considering differences between the two groups, the average response from the separate groups differed with respect to the emphasis placed on feelings versus thoughts. A typical response from the treatment group tended to include mention of both thoughts and feelings, as was the case for the participant who stated:

"I think so. It gave me a chance to reflect on how I was feeling and what I was thinking. I think it emphasized, even though I wasn't consciously thinking of that at the time, but emphasizing my feelings and my thoughts in this depiction."

A typical response from the control group, on the other hand, tended to focus on thoughts to the exclusion of feelings as was the case for the participant who stated:

"If I hadn't [done the activity] I probably would have left and maybe thought a little bit about it, but then gone on with my day. But then this, I had to think, how helpful was this for me? So a little bit more processing afterwards."

Self-reflection. Comments that were categorized within this theme involved mention of contemplating personal preferences or values as they relate to career decisions. Most of the comments about self-reflection were mentioned in response to the question, "What were you most aware of after the interview?" In total, four comments from four different individuals were categorized within this theme. The comments were equally divided with respect to whether they

were made by an individual in the control or the treatment group, with two comments from each group.

One of the participant comments that exemplifies this category was made by an individual from the control group, who described considering the types of sacrifices he would be willing to make for his career:

> *"I think I learned more about myself – like during the interview I learned a lot about that person, but then afterwards it was a lot of self-reflection, like, 'okay, they worked two years in a job they didn't like knowing that was the stepping stone to get to a job they'd like. Is that something I want to do?' Or 'they were willing to bounce around the country'. Like [interviewee two] went from California to South Carolina to Kansas, so he bounced all around and so it made me a little self-reflective in terms of 'okay is that job something I want to do? ...No, I don't think so but maybe something close.'"*

The responses from participants in the control group versus the treatment group were decidedly similar; however, there was a slight difference between the groups in that the comments from both of the individuals in the control group explicitly referred to "reflection" or "self-reflection" whereas the comments from the two individuals in the treatment group instead described the particular questions or preferences contemplated without labeling their thoughts as "self-reflection." For example, one of the participants from the treatment described thoughts she recalled in the time after the informational interview:

> *"[I was most aware] of some of my thoughts that were more like questions. 'Do I need to have a personality like hers to be in her position?' or, um, 'would I fit well, because our demeanors are a little bit different. Hers is a little bit more boisterous and mine's a little bit quieter.'"*

In listening to the content of participant's responses, it seemed that this difference in phrasing may have reflected a difference in the experience participants had; it seemed that the two participants in the control group recalled a particular span of time during which they felt contemplative whereas the two individuals in the treatment group were less focused on self-reflection and simply recalled a couple of thoughts related to the self.

Focus on feelings. Five quotes from five different participants comprise the theme "focus on feelings." The number of participants from each group to have a comment categorized within this theme was roughly equivalent with three of the quotes coming from participants in the control group and the other two quotes coming from members of the treatment group. This theme consisted of comments about participants being more attentive to what they were feeling than usual.

Unlike comments assigned to the theme "emotional awareness", comments that were categorized within the subtheme "focus on feelings" did not demonstrate an enhanced understanding of a specific feeling nor did they describe a feeling in detail; instead, quotes assigned to this theme merely conveyed that participants were paying more attention to feelings than usual. The comments that were categorized within this theme typically arose in response to the question, "Did completing this activity affect your experience of the interview?" and were therefore about increased attention to feeling during the interview itself, whereas most of the comments categorized within the theme "emotional awareness" pertained to feelings experienced after the informational interview.

As a caveat, it is worth mentioning that most of the comments within this category were stated somewhat tentatively, with the words "probably" or "maybe" preceding the claim that the activity increased attention to feelings. On the whole, participants communicated the message

that the activity *likely* made them more focused on their feelings. A typical comment within this category was:

> *"I was aware that I would have to rate how positively or negatively I felt about it, so I guess my feelings about it weren't affected, but it was present, like I knew that was something, so it probably made me focus on feelings in the interview more than I would have if I didn't have the activity."*

Participants' responses varied considerably, however, with respect to the level of conviction they expressed about the activity impacting their attention to feelings. Their responses could be conceptualized as occurring along a spectrum of how certain they were that the activity made them more attuned to their feelings. On the low end of the spectrum, a participant who stated that the activity impacted her attention to feeling in a particularly tentative manner remarked, "Maybe during the interview, maybe I was paying attention to or looking for feelings that I would have after I got through. Maybe, but I'm not sure." On the other end of the spectrum, a participant who was confident that the activity made her more attuned to her feelings stated simply, "[The activity] was helpful during the interview to help focus on the emotions."

Summary of Results

The findings from this study show that participants assigned to a treatment group who completed the PER reported significantly more intuition-related information than did controls when asked an open-ended question about their experience of the time during and after the interview. Qualitative analysis of the content of participants' comments during a follow-up interview also indicated noticeable differences between the treatment and control group despite the fact that both groups were asked identical questions. More specifically, individuals in the treatment group tended to discuss topics related to emotions, physical sensations, enhanced

motivation, intuition, and enhanced memory; by contrast, individuals in the control group tended to discuss factual details from the interview and frequently mentioned the value of pausing to reassess the situation. There were also some similarities across groups, with participants from both groups mentioning having time to "process" their experience, describing a process of self-reflection after the interview, and stating that the activity made them attend more to feelings than usual.

Theme	No. of participants from treatment group	No. of participants from control group
Memory aid	4	0
Intuition	6	3
Self-encouragement	3	1
Emotional awareness	6	2
Emotions and the body	6	0
In my head	1	6
Taking pause	0	4
Time to process	3	4
Self-reflection	2	2
Focus on feelings	2	3

Discussion

The present study contributes to the scientific literature in the area of career exploration and decision-making by examining the effectiveness of a novel mindfulness-based intervention designed to enhance awareness of intuition for individuals who are engaged in the career

decision making process. This study contributes qualitative data that support the effectiveness of this new intervention and offers additional ways the PER might be helpful in furthering the goals inherent in the Trilateral Model of Adaptive Career Decision-making (Krieshok et al., 2009).

Summary of Findings

Analysis of follow-up interviews conducted one week after participants completed an informational interview revealed that individuals who completed the PER in conjunction with the interview mentioned more intuition-related information in response to open-ended questions than did controls. This was the case even though participants in the two groups were matched based on their tendency to rely on experiential data as measured by the REI and were statistically equal in their tendency to rely on rational data also measured by the REI. These findings suggest that the intervention may have facilitated greater awareness and memory of intuitive data gathered in the process of completing the informational interview.

Qualitative comparison of the content of participants' responses showed that participants in the treatment group mentioned feeling excited about their future careers and talked about physical sensations and specific emotions considerably more often than did participants in the control group, providing additional support for the idea that the PER could enhance attention to intuition. The qualitative data also suggest that the PER may have positively contributed to participants' awareness of their emotions and their excitement about their future career goals. Finally, participant's responses suggested additional ways that the PER could be useful to people engaged in career exploration that merit further study. Specifically, participants felt that the intervention led to improved memory of the interview itself, enhanced their motivation to complete more informational interviews, and served as a reminder of their long-term career goals as well as a tool for alleviating self-doubt.

The fact that participants in the treatment group mentioned enhanced motivation to complete more informational interviews and tended to express more excitement about their future careers relative to individuals in the control group suggests the possibility that the PER could contribute to the goals promoted by the Trilateral Model in more than one way. Not only might it facilitate the integration of System 1 and System 2 processing, but it might also promote occupational engagement by enhancing awareness of one's excitement about future career possibilities.

Limitations and Suggestions for Future Research

The small sample size and sample selection greatly limit the generalizability of this study. All of the participants in this study were graduate students enrolled in a counseling psychology course and therefore had particular characteristics (e.g., highly motivated, intelligent, and attuned to intrapersonal processes) that may have interacted with the study's intervention to make it more effective than it might be if utilized by other populations.

It is also important to consider the fact that all of the participants in this study learned about the Trilateral Model of Adaptive Career Decision-making (Krieshok et al., 2009) as part of their coursework in EPSY 846. They were therefore familiar with the constructs explored in this study, and it is entirely possible that their familiarity with these constructs influenced their reactions to the intervention or their responses to my questions. While none of the participants gave any indication that they guessed the hypotheses or purpose of the study, their theoretical knowledge about System 1 and System 2 may have prompted them to attend more closely to feelings or to think about their experiences in a different way than individuals never exposed to career decision-making theory might.

Furthermore, the follow-up interview may have influenced participants above and beyond what the intervention alone did. While the interview was held constant across groups and therefore does not pose a threat to internal validity, it may have influenced the study's findings by providing participants with additional time after the interview during which they could reflect on the informational interview more than they typically would have. Indeed, one participant from the control group suggested as much, stating that in anticipation of the follow-up interview she had spent time thinking about what she would say during the follow-up interview about her informational interview.

Demand characteristics and social desirability may also have been at play as participants generally seemed motivated to respond to questions in the follow-up interview in a way that they thought would please me (e.g., overstating how "helpful" the study was or entertaining the possibility that they learned something about themselves when perhaps they had not). While several participants expressed curiosity about the study's purpose and mentioned that they had no idea what the study was about (and therefore did not likely guess my hypotheses), I got the impression that some participant responses were influenced by their desire to help me as the researcher. I took this aspect of the interview situation into account both while analyzing the data and in describing the results, and I have sought to present the data in a way that enabled readers to understand both the context and the nuances of participant responses. For example, I made a point to mention whether or not participant's statements were made emphatically or more tentatively (e.g., when participants stated, "*I guess* I learned something" or "*maybe* I was more focused on emotion"), and I provided information about which interview question prompted particular responses, particularly when I thought knowledge of the context might alter the understood meaning.

Researcher bias was another threat to the validity of my findings that I worked to manage carefully throughout the study. During the data collection process and the analysis particularly, I worked to remain attuned to how my biases could influence the study's results. For example, I was concerned that I might unintentionally provide more positive verbal and non-verbal feedback to participants when they made statements that confirmed my own ideas about the influence of the intervention. I therefore took measures to reduce the degree to which this would occur by crafting a carefully structured interview protocol and by maintaining a high degree of self-awareness throughout the follow-up interviews, particularly with respect to my use of minimal encouragers and non-verbal responses.

During the process of data analysis, I was similarly attuned to my biases in an effort to prevent them from distorting my findings. I actively reflected on my biases and considered how they might influence my perception of the data. As a result of reflecting on my biases, I chose to seek out evidence that might contradict these biases. As an additional measure to check my biases, I included a second analyst when coding the transcripts for intuitive versus rational comments. While I actively sought to reduce any possible negative impact of my biases on the study in the ways described above, future studies might be strengthened by employing an outside interviewer who is blind to which group participants belonged to.

Future research on this intervention that uses a larger sample selected from the general population would be a helpful next step in further exploring the intervention's effectiveness and in improving the generalizability of the findings. If it could be found that a larger sample of individuals unfamiliar with the Trilateral Model responded similarly to the participants in this study, it would provide stronger evidence of the intervention's effectiveness.

Given this study's preliminary findings that participants who completed the PER reported a sense of enhanced memory and motivation, it would also be informative to experimentally test the impact of this intervention on memory and motivation. Future research could therefore focus on how the PER might impact memory and motivation. Ideally, research in this area would involve a relatively objective measure of memory and motivation (e.g., having participants recall specific details rather than rate how well they feel they remembered the event) to supplement the subjective data gathered in this study.

Finally, future research in the area of intuition and career decision-making would benefit greatly from new measures that could detect changes in a person's reliance on intuition and rationality over time. This would enable us to more accurately assess and compare the efficacy of new interventions intended to enhance attention to intuition or to help with the integration of rational and intuitive processing.

Implications and Applications

If additional research supports the effectiveness of the Post-Engagement Reflection, it could be beneficial in a variety of contexts. One can easily imagine numerous real-world applications as an intervention like this is simple to implement and does not require much time or many resources. The PER could be used after any sort of career exploration or engagement.

Anyone who wishes to “tune in” to their pre-verbal or unconscious reactions to a novel work-related situation could dedicate five minutes to completing the mindfulness activity and the associated drawing and rating how positive the experience was. For instance, someone could complete the PER after a day of volunteer work or an internship. This could help not only to enhance attention to intuition in the moment, but might improve their memory of the experience and enhance their motivation to participate in further occupational engagement. Furthermore, the

PER worksheets could be kept to later remind oneself of the experience, remain focused on vocational goals, or compare a new experience to past experiences after which one also completed the PER.

For example, we could imagine that a person who is occupationally engaged could complete the PER after attending his or her first day at a new internship, after taking a new class, and after volunteering in a new place. By completing the PER, this person could become more aware of his or her "gut feelings" immediately after engaging in the experience. Additionally, this person could preserve these pages as a sort of "snap shot" of their intuitive reactions to help recall the feelings associated with the experience. Furthermore, if the interviewees in this study were correct in their assertions that completing the PER improved their memory, the act of completing the PER could also help to enhance the person's memory not only of his or her reactions to an occupational engagement experience, but also of the event itself, thereby adding to a person's "fund" of information that they can draw from when making career-related decisions.

Ultimately, continued research in this area could help people to better integrate their intuitive impressions with their thoughts about a job or career, which would be of great utility in achieving the goals advanced by the Trilateral Model of Adaptive Career Decision-making (Krieshok et al., 2009).

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Appendix A

Demographic Questionnaire

Please write your answer into the space next to the statement.

Age:

Sex:

Circle which year you are in in your program.

1st

2nd

3rd

4th

5th or above

What is your ethnicity?

What do you plan to do after graduate school?

Appendix B

Occupational Engagement Scale for Students (OES-S)

1. I talk about my career choices with family or friends
2. I have contact with people working in fields I find interesting
3. I gain hands on experience that I might use in the future
4. I volunteer in an area that I find interesting
5. I attend presentations or talks related to a career I might find interesting
6. I ask people in social settings about what they do for a living or what they are interested in doing
7. I visit places I'm interested in working so I can learn more about them
8. I pursue opportunities in life because I just know they will come in handy
9. I do lots of things that are interesting to me

Appendix C

Interview Protocol

Please walk me through what you did to complete the activity.

What did the informational interview bring up for you?

Follow-up questions:

Did you notice any particular feelings about the interview?

Did you notice any particular thoughts about the interview?

(Probes will be used only if the interviewee does not provide information about thoughts or feelings -- e.g., an interviewee who comments only on thoughts about the interview would be probed with: "did you notice any particular feelings?")

What were you most aware of during and immediately after the interview?

Did you learn anything about yourself as a result of this activity?

Based on this experience, what are your impressions of the job you explored?

Did completing this activity affect your experience of the interview? (If so, how?)

Was this activity helpful in some way? (If so, how?)

Was there anything else you noticed surrounding the activity that you want to comment on?

Appendix D

Rational Experiential Inventory

1. I try to avoid situations that require thinking in depth about something.
2. I'm not that good at figuring out complicated problems.
3. I enjoy intellectual challenges.
4. I am not very good at solving problems that require careful logical analysis.
5. I don't like to have to do a lot of thinking.
6. I enjoys solving problems that require hard thinking.
7. Thinking is not my idea of an enjoyable activity.
8. I am not a very analytical thinker.
9. Reasoning things out carefully is not one of my strong points.
10. I prefer complex problems to simple problems.
11. Thinking hard and for a long time about something gives me little satisfaction.
12. I don't reason well under pressure.
13. I am much better at figuring things out logically than most people.
14. I have a logical mind.
15. I enjoy thinking in abstract terms.
16. I have no problem thinking things through carefully.

17. Using logic usually works well for me in figuring out problems in my life.

18. Knowing the answer without having to understand the reasoning behind it is good enough for me.

19. I usually have clear, explainable reasons for my decisions.

20. Learning new ways to think would be very appealing to me.

21. I like to rely on my intuitive hunches.

22. I don't have a very good sense of intuition.

23. Using my gut feelings usually works well for me in figuring out problems in my life.

24. I believe in trusting my hunches.

25. Intuition can be a very useful way to solve problems.

26. I often go by my instincts when deciding on a course of action.

27. I trust my initial feelings about people.

28. When it comes to trusting people, I can usually rely on my gut feelings.

29. If I were to rely on my gut feelings I would often make mistakes.

30. I don't like situations in which I have to rely on intuition.

31. I think there are times when one should rely on one's intuition.

32. I think it's foolish to make important decisions based on feelings.

33. I don't think it's a good idea to rely on one's intuition for important decisions.

34. I generally don't depend on my feelings to help me make decisions.

35. I hardly ever go wrong when I listen to my deepest gut feelings to find an aswer.

36. I would not want to depend on anyone who described himself or herself as intuitive.

37. My snap judgments are probably not as good as most people's.

38. I tend to use my heart as a guide for my actions.

39. I can usually feel when a person is right or wrong even if I can't explain how I know.

40. I suspect my hunches are inaccurate as often as they are accurate.

Appendix E:

Career Futures Inventory
1 (strongly disagree) to 5 (strongly agree)

I am good at adapting to new work settings
I can adapt to change in my career plans
I can overcome potential barriers that may exist in my career
I enjoy trying new work-related tasks
I can adapt to change in the world of work
I will adjust easily to shifting demands at work
Others would say that I am adaptable to change in my career plans
My career success will be determined by my efforts
I tend to bounce back when my career plans don't work out quite right
I am rarely in control of my career
I am not in control of my career success

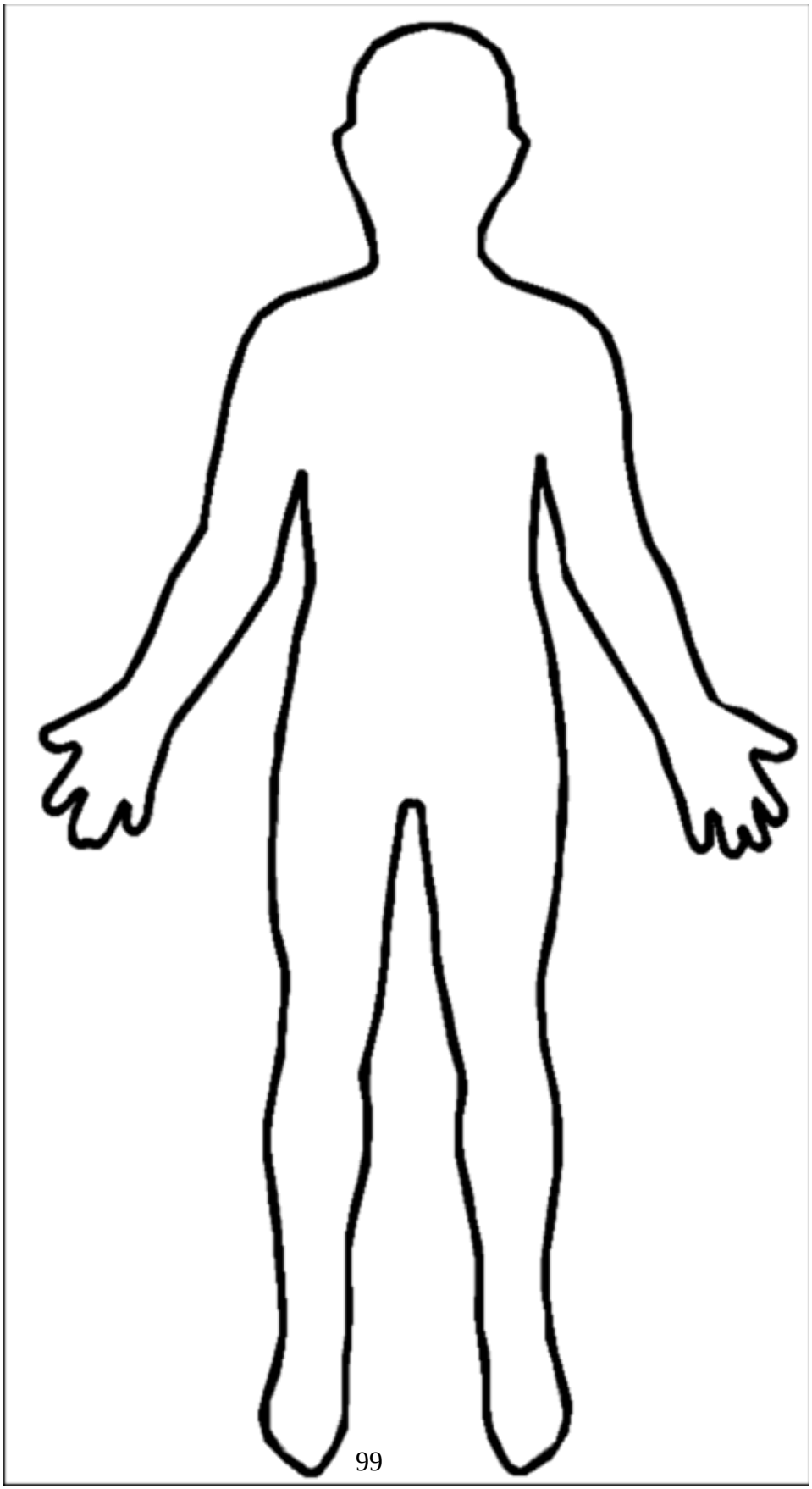
I get excited when I think about my career
Thinking about my career inspires me
Thinking about my career frustrates me
It is difficult for me to set career goals
It is difficult to relate my abilities to a specific career plan
I understand my work-related interests
I am eager to pursue my career dreams
I am unsure of my future career success
It is hard to discover the right career
Planning my career is a natural activity
I will definitely make the right decisions in my career.

I am good at understanding job market trends
I do not understand job market trends
It is easy to see future employment trends.

Appendix F

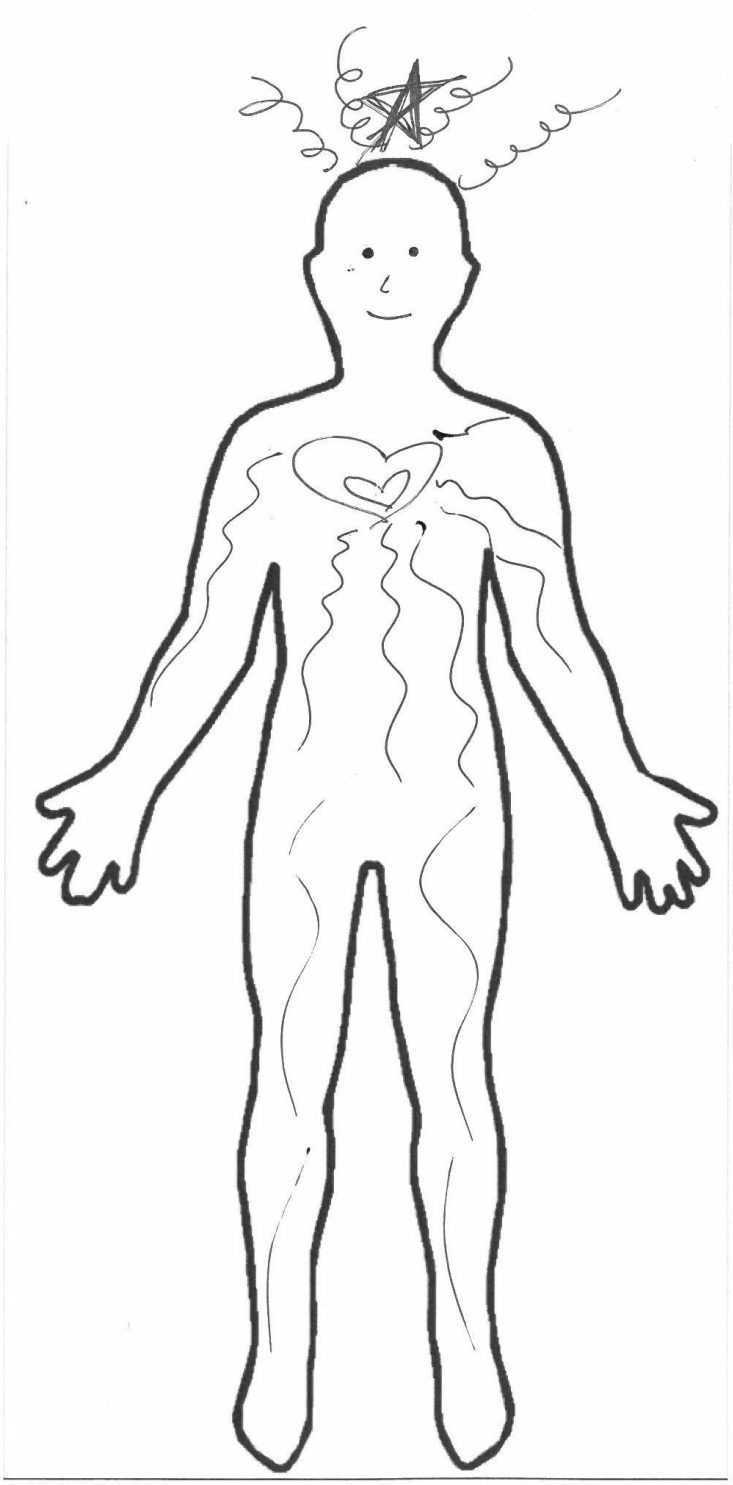
Post-Engagement Reflection

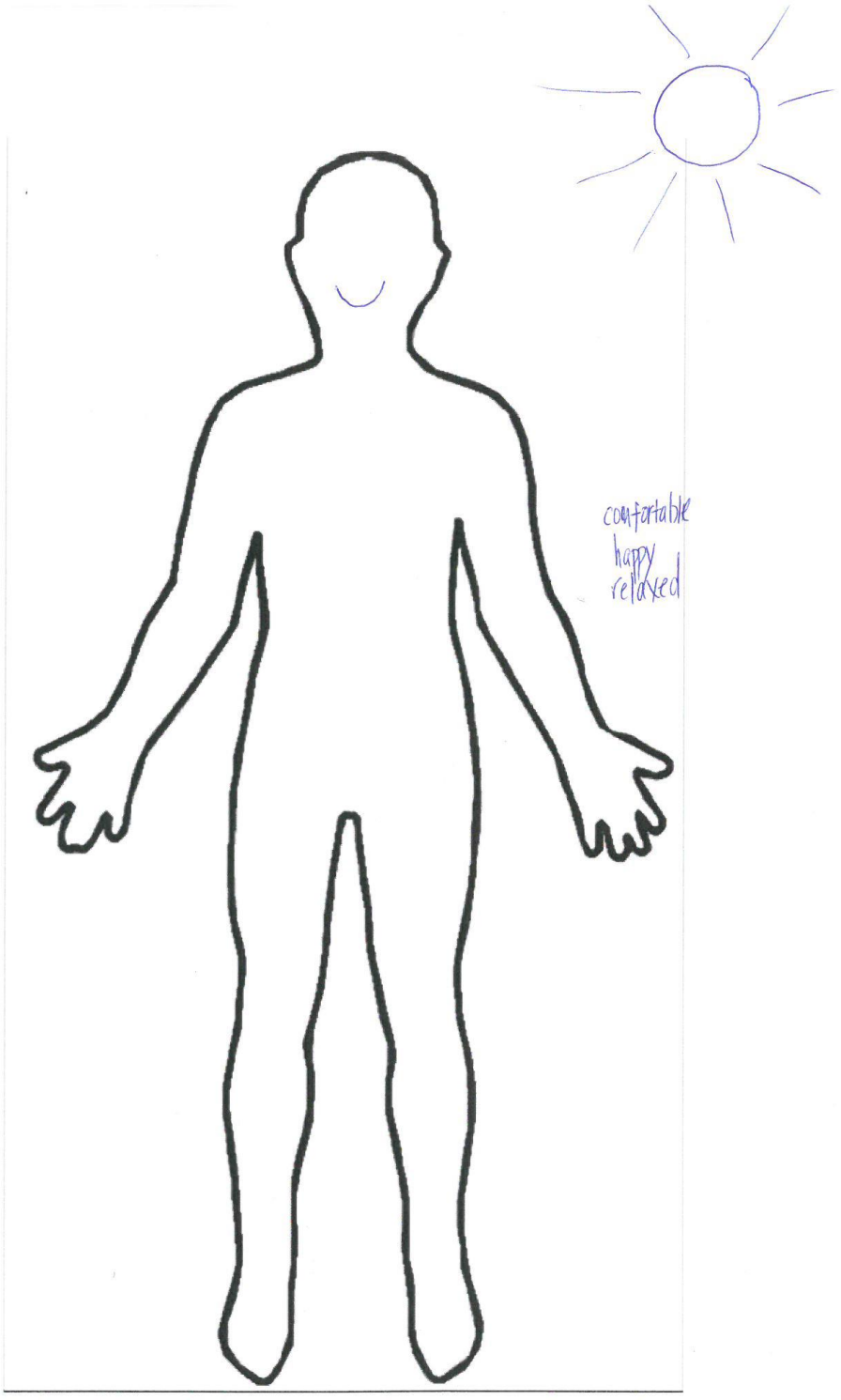
1. Set a timer for at least 1 minute.
2. Close your eyes and observe the feelings that arise as you reflect on your informational interview.
3. After one minute of reflection, use the following page with an outline of the human body to represent what you are feeling and where. Feel free to draw facial expressions, clothes, or abstract shapes – just draw whatever will best help you to capture the feelings you experienced when you closed your eyes.
4. On the final page, mark a line to indicate how positively or negatively you felt about the informational interview as a whole. Mark your initial impression without analyzing the reasons for your response.



Draw a line to indicate how positively or negatively you feel about the interview experience.

− I----------I +




comfortable
happy
relaxed